TRAINING & SIMULATION

C4I SYSTEMS

COMMUNICATION SYSTEMS

ISR ELECTRO OPTICS

LAND SYSTEMS

COMPANY PROFILE

NEXT IS NOW®

2016

EW & SIGINT

CYBER SYSTEMS

UAS

AEROSPACE

LAND SYSTEMS

ESA

NAVAL SYSTEMS

HOMELAND SECURITY

Elbit Systems™

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OUR MISSION

Our mission is to empower our customers with the tools and technologies necessary to face the future with confidence. We build on our core competencies to tailor total solutions that meet our customers' specific needs. Drawing on our multidisciplinary expertise, we anticipate our customers' needs and help them realize their vision.

Meeting the Challenge of Change

Today's growing worldwide defense, security and safety concerns have created the need for net-centric approaches to counter emerging, non-traditional threats. Forces, systems and platforms must be woven into an interoperable and joint network in order to succeed on the modern battlefield. Our systems provide customers with cost-effective capabilities to deploy all forces and responders on a networked basis, maximizing the potential for a powerful and coordinated reaction with speed, precision and intelligence.

Maintaining a Tradition of Innovation

Our people are the key to our ability to deliver solutions that blend technology with creativity. Our team incorporates insight and skills gained from years of operational experience and applies them in every area of our expertise. The depth and breadth of our systems for aerospace, land, naval, homeland security, cyber and commercial aviation applications cover every link in the operations chain – from situational awareness to mission planning, from detection to mission execution, and from simulated training to the growing demand for unmanned systems. We have achieved worldwide recognition for our airborne, land and naval platform upgrades, both as a prime contractor and as a systems supplier. By innovating and integrating our technologically advanced systems, we extend the life cycle of a fleet and provide customers with affordable enhanced operational capabilities. The same systems and products are also installed and integrated onboard as original equipment in new defense and commercial platforms.

Our intelligence surveillance target acquisition and reconnaissance (ISTAR) solutions cover the full range of manned and unmanned systems. Our command, control, communications, computers and intelligence (C^4I) activities cover an impressive portfolio of integrated solutions that link every echelon to real-time mission-critical information, from the headquarters all the way to the "digital soldier." Supporting our commitment to service, added value and full spectrum capabilities, we provide logistic support, maintenance and repair services for customers around the world. This includes sophisticated simulation systems, "power by the hour" flight training under private finance initiatives, and the establishment and operation of maintenance and repair centers. We also develop and supply a broad range of cyber-based systems. We also develop and supply a broad range of cyber-based systems and products, including for cyber-protection of commercial and governmental infrastructures.

Michael Federmann
Chairman of the Board

Bezhalel Machlis
President and CEO

Expanding Our Capabilities

In 2015, we enhanced our capabilities through acquisitions in Israel and the establishment and expansion of international joint ventures in various key markets.

We also focused our portfolio through the divestiture of certain non-core assets.

Extending Our Reach

The Company operates as a worldwide organization, focusing our efforts both globally and locally in order to more effectively meet the needs of our customers around the world. Our business philosophy encourages partnerships with local industries and the utilization of regional capabilities. The cooperative relationships we establish with other contractors and suppliers enhance our emphasis on our highest priority – our customers.

AEROSPACE

No longer “up-in-the-air,” the pilot and aircrew are connected, situationally aware and capable of carrying out joint operations with forces on the ground or at sea.

***TARGO™** Helmet-Mounted Avionics (HMA™)*

Focus on Fusion –

UNIFYING FORCES TO WIN

Our high-performance aerospace systems are compatible with emerging net-centric concepts, ensuring enhanced situational awareness, faster decision making and optimal response.

Our unique airborne Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C^4ISR) solutions provide pilots with data communications and real-time images derived from intelligence, surveillance and reconnaissance sources.

These solutions enable an air force to share mission-critical data with ground and naval platforms, driving joint, seamless operations between air-to-air, air-to-ground, manned and unmanned platforms.

This multidisciplinary concept extends to the design of training and simulation systems that accommodate evolving missions and combine air and ground systems within a single architecture.

From a Single Sensor to an Entire Cockpit Avionics Suite – Complete Solutions from a Single Source

Our comprehensive airborne systems capabilities afford us the flexibility to provide a single sensor or an entire cockpit avionics suite. Designed to be net-centric, oriented, intelligent, fast and precise, our high-performance avionic products and systems incorporate a wide range of core technologies. We provide battle-proven electronic and electro-optic combat systems for air forces worldwide – from flight instrumentation to head-up displays (HUD), and from helmet-mounted displays (HMD) to guided weapons. Our systems are integrated on fixed and rotary-wing aircraft, whether they are new or mature, from both eastern and western manufacturers. Our airborne systems are installed as original equipment in new aircraft. We also supply unique commercial avionics systems and aerostructures for civilian aircraft.

JSF (F-35)

Increasing Pilot's Effectiveness and Safety with Helmet-Mounted Systems (HMS)

Our advanced helmet systems enhance the pilot's situational awareness by concentrating data from all aircraft systems and sensors, and displaying it spatially either on the pilot's visor or night vision goggles (NVG). The pilot's head no longer has to be raised or lowered to read vital data, thereby increasing operational efficiency and pilot safety.

We have established a clear leadership position in the helmet mounted systems (HMS) market. We supply a range of HMS for fighter, transport, special mission and other commercial aircraft, including: Targo, Display and Sight Helmet (DASH), Joint Helmet-Mounted Cueing System (JHMCS), JHMCS-II, Digital JHMCS and the Joint Strike Fighter (JSF) F-35 HMDS.

- **Targo Helmet-Mounted Avionics (HMA™)** provides a range of capabilities that can be uniquely tailored to each customer's needs in a broad spectrum of aircraft. The range of aircraft includes light attack, transport, utility, search and rescue, fighters and lead-in trainers with embedded training for enhanced high-fidelity training. Targo is easily integrated with any aircraft's avionics, providing all the benefits of legacy helmet-mounted displays (HMD). Targo also supports a range of commercial applications using internally embedded avionics.
- **DJHMCS and JHMCS - II variants of Targo** have been well accepted as the legacy JHMCS enhancements. These systems provide all current capabilities to pilots with a wide range of new features, such as color, video, virtual training Canary pilot, health monitoring and more. The family of products also provides logistics advantages, easing integration and significantly reducing the system's life-cycle cost (LCC). The systems offer night vision cueing and display (NVCD), based on standard NVGs our QuadEye™ PNVG, to complement their use during both night and day.
- **F-35 HMDS,** co-developed with Rockwell Collins, is the most advanced HMD currently in production. It provides a binocular, high-resolution, wide field-of-view (FOV) display that allows pilots day and night operation in all weather conditions. The HMDS is designed specifically for the F-35, replacing the legacy head-up display (HUD) with a virtual HUD, and providing high accuracy with low latency using an advanced, hybrid head tracking system.

Enhanced Safety and Situational Awareness

HDTS (Helmet Display and Tracking System) combines innovative LOS (line-of-sight) technology and video display capabilities with the legacy ANVIS/HUD™ system. Independent displays for each pilot present critical flight data and multiple symbols related to the specific mission, including 2D and 3D conformal and color symbology overlaid on a head-up display. By reducing the pilot's head motion for cockpit scanning, the system increases situational awareness, enhances flight safety and improves crew coordination.

Suitable for utility, maritime and multi-role helicopters, the HDTS is capable of weapon slaving by sight.

The HDTS Low Visibility Landing (LVL) solution enhances survivability in low visibility situations, inclement weather, low-level flight and during night operations. Using advanced LOS and intuitive 3D conformal symbology, the air crew can fly and hover the helicopter without outside visual references, while simultaneously recognizing dangerous lateral drift.

BrightNite

Low-flying aircraft are especially vulnerable to threats such as difficult terrain, enemy fire and the intersection of utility wires in the flight path. Sorties must often be carried out in a DVE, adding to the already heavy workload and leaving flight crews to rely on NVGs to accomplish their mission. Factors limiting the pilots' FOV include complete darkness, poor weather conditions, brownouts, whiteouts and sandstorms.

BrightNite overcomes these visibility limitations and greatly improves mission effectiveness and flight safety. The system processes real-time panorama video enhanced by a 3D conformal symbology concept, and transmits high-resolution video to the HMD, enabling the pilot to fly in a head-up, eyes-out position. BrightNite utilizes unified location-based information culled from a wide FOV to display crystal clear images, regardless of visibility conditions.

Cost-effective, lightweight and compact, BrightNite can present information to multiple pilots simultaneously on an intuitive multi-functional display.

BrightNite™

ANVIS/HUD™

JHMCS™ II

JHMCS™

BMS for helicopters: *The Apache helicopter is equipped with Elbit Systems' HeliC³om™, Integrated Helmet and Display Sight System (IHADSS) and mission computer. HeliC³om™ is a fully digital, integrated command, control, communications and mission management system for attack helicopters. This unique system includes accurate data communications and transmissions and real-time tactical pictures for enhanced situational awareness, making the mission management process easier, user-friendly and more accessible.*

A World Leader in Aircraft and Helicopter Upgrade Programs Enhancing Operational Capabilities

As a world leader in aircraft and helicopter upgrade programs, we integrate electro-optical and EW systems, advanced weapons, communications, and navigation to provide the advanced net-centric capabilities vital for today's fast-paced missions. In addition, by reducing logistic turnaround time, our systems provide greater fleet availability, and in turn, a greater number of missions per aircraft.

We have conducted comprehensive upgrade programs as the prime contractor on fixed-wing aircraft such as the F-4, F-5, T-38, ALX Super Tucano, AMX, AT-63 Pampa, MiG-21, SU-25, L-39, IAR-99, C-95 and C-130. Our rotary-wing aircraft upgrades include those for the Puma 330, CH-53, UH-60, AH-1, AS-365, Mi-8, Mi-17 and Mi-24. In addition, we have supplied advanced avionics systems for the V-22 Osprey tilt rotorcraft, the F-15, F-16, F-18, M-2000, T-38, Tejas, C-130 and T-45 aircraft as well as for the UH-60 Black Hawk, AH-1 Cobra, AH-64 Apache, CH-47, CH-48, CH-53 Stallion, OH-58 Kiowa, Mi-17, Mi-24, Bell 212 and KMH helicopters.

Light Enhanced Weapon Management System for Helicopters (LEAP)

LEAP, our new armament suite, converts helicopters into armed carriers with just a minimal increase in weight. LEAP addresses the need for versatility in operations for rotary-wing platforms demanded by low-intensity conflicts and asymmetric warfare.

LEAP responds to defense budget reduction requirements by enabling the armament of existing platforms rather than requiring the purchase of new helicopters to add operational functions such as attack, close support for ground forces, special combat search and rescue (CSAR) missions, as well as various intelligence missions.

LEAP is tailored to the customer's needs and may be equipped with an accurate Guided Advanced Tactical Rocket (GATR), 70/80mm laser-guided rocket, electro-optic payload, armament and ballistic computer and the ANVIS/HUD™-24T HMS, which includes tracking capabilities and LOS. The combination of the solutions offered by LEAP enables intuitive mission management of the armament, real-time ballistic accuracy and effective management and fire launch by the pilot. These solutions provide full display of the flight data both day and night, superimposed onto the NVGs, for enhanced operational capabilities. The LEAP system has already been integrated onboard several platforms.

***Lizard™** – a modular guidance kit for precision strike capabilities.*

Tailored to the Customer's Needs – Smart Precision Guidance that Makes Sense

For decades, Elbit Systems has repeatedly proven its ability to develop and deliver increasingly advanced guided munitions systems and seekers that improve accuracy, enhance firepower, extend operational capabilities and boost safety. The systems are based on the latest-generation technologies, and are incorporated into solutions for both air and ground applications. Our guided munitions products comply with new doctrine demands for high-accuracy and low collateral damage, while reducing manpower and increasing firepower within the sensor-to-shooter concept.

We supply the Lizard family (2, 3 and 4) of laser-based and GPS precision guidance kits. These modular kits enable the ease of interchanging of seekers and warheads, allowing ordinary general purpose bombs (both western and eastern versions) to seek and destroy a variety of targets.

Our advanced seeker technology and tracking algorithm enables the Lizard to track the laser spot, even in the harshest conditions, while guiding the bomb to precisely strike even fast moving and maneuvering targets at extended ranges. Lizard's accuracy and reliability support mission success, using fewer sorties, pilots and aircraft.

The GPS/INS module provides all-weather capabilities, as well as a common aerodynamic configuration to enhance compatibility across aircraft.

For certain combat scenarios where small, affordable, accurate precision-guided weapons are required, we have developed the Mini Lizard – a compact, gliding, accurate weapon suitable for light attack or mission aircraft. Using its laser and GPS guidance technology, the Mini Lizard ensures a high first round hit probability on a wide range of targets.

For the tactical requirements of an urban environment, the cost-effective, laser-guided GATR (Guided Advanced Tactical Rocket) system offers a degree of precision strike capability unmatched by any other 70mm guided munitions system, especially when combined with our advanced launcher. With cutting-edge warheads and variable fuzing solutions, the GATR provides combat flexibility to engage most target sets, including soft, lightly armored, stationary and moving/maneuvering, with a reduced collateral damage footprint.

In addition to the GATR system, our Smart Tactical Advanced Rocket (STAR) is laser-guided with high-precision strike capabilities. STAR is designed to greatly improve hit probability, engage targets at long range and significantly reduce collateral damage, especially in crowded urban warfare scenarios. STAR is compatible with eastern and western rocket systems of varying calibers. The system can be launched from combat vehicles, stationary launchers, helicopters and fighter aircraft.

The LG²MK (Laser and GPS-Guided Mortar Kit) converts existing 120mm standard mortars into pinpoint accuracy weapons. The LG²MK supports high first round hit probability and minimizes collateral damage. The LG²MK is an ideal guided munitions solution for front-line infantry, providing the capability for rapid and efficient sensor-to-shooter loop engagement.

***STAR™** – Smart Tactical Advanced Rocket is laser-guided with high-precision strike capabilities.*

***DCoMPASS™** – Digital Compact Multi-Purpose Advanced Stabilized System.*

***mini-MUSIC™** – a compact, lightweight system, optimized for small and medium rotary and fixed wing aircraft.*

EO Countermeasures Systems

Elbit Systems Electro-optics - Elop (Elop) offers a family of advanced, highly effective DIRCM systems for military and commercial fixed and rotary-wing aircraft. MUSIC™ protects military and commercial aircraft from surface-to-air IR missiles (MANPADS) and is installed without impacting the platform's performance. C-MUSIC™ is a pod-mounted DIRCM system specially designed to defend large commercial jet aircraft or tankers, including the B777, B747, B737, A320 and KC-390. The pod integrates all of the elements of the protection system, including the Missile Warning System (MWS).

EO for Close Air Support

We have developed a wide range of advanced electro-optic products for close air support applications. Laser designators for laser-guided munitions include the very compact SERPENT, which is based on diode-pumped technology. The PLDR, a portable lightweight laser designator and range-finder, facilitates laser designation for all types of laser-guided munitions.

Rattler G is a dismounted, handheld and man-portable short-range target designator system that enables war fighters to rapidly fire on hostile targets. Our close air support repertoire is rounded out by a family of man-portable thermal imagers, including the CORAL-LS and CORAL-CR, mounted on the Mini Atlas target acquisition and fire directing system

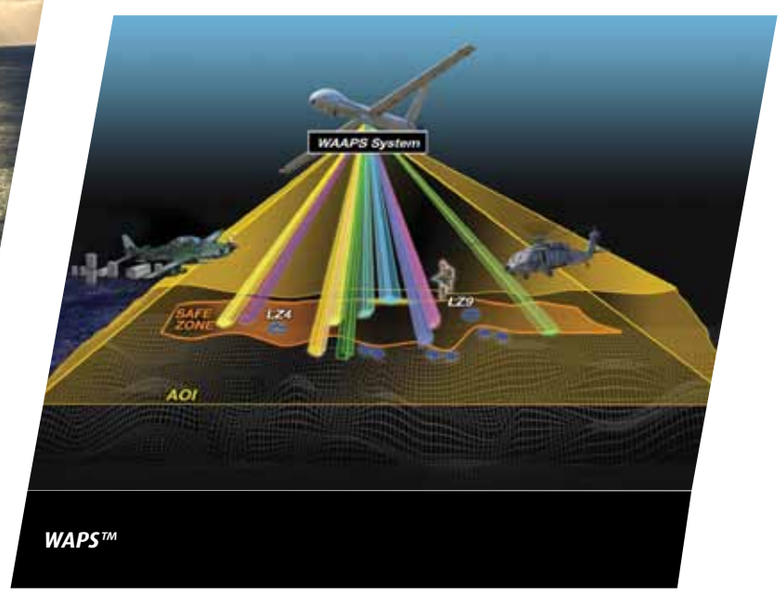
Airborne Reconnaissance Systems

Our airborne reconnaissance systems for long-range visual intelligence (VISINT) gathering from high, medium and low altitudes include: electro-optic infrared long-range oblique photography (EO/IR LOROP); tactical low and medium altitude photography systems such as the CONDOR™2 and CONDOR™ TAC systems; the very long-range Advanced Multi-Sensor Payload System (AMPS) with full motion video (FMV); the Digital Compact Multi-Purpose Advanced Stabilized System (DCoMPASS™); and the highly-compact, highly-stabilized Micro CoMPASS™. The Integrated Component-based Exploitation (ICE) system provides ISR centers with an end-to-end solution for the entire operational cycle of multi-sensor, digital imagery exploitation.

EO Observation Systems

Elop develops advanced spaceborne electro-optic observation systems for governmental, commercial and scientific applications. The activities are supported by a cutting-edge infrastructure for the design, manufacture, testing and calibration of components and systems operating in harsh space environments. Several of our advanced panchromatic

Cockpit NG™



WAPS™

and multi-spectral cameras for high-resolution remote sensing satellites are currently operational in space, including Israel's OFEQ5, OFEQ7 and OFEQ9 satellites, the Korean Multi-Spectral Space Camera System (MSC), and the EROS A and B high-resolution remote sensing cameras.

Head-Up Displays

Over the past four decades, we have supplied thousands of head-up displays (HUD) for dozens of aircraft types: from large fighter cockpits such as the F-16 C/D, F-16I, T-50,
MiG-29 and SU-30, to small cockpits including the T-38, F-5, ALX and Kfir C8. Our systems for commercial applications include digital HUDs featuring an LCD-based image source and a compact HUD with advanced optics. Our customers range from the U.S. Air Force, the Israeli Air Force and other major air forces worldwide, to aircraft of Lockheed Martin Aerospace and Boeing, to Embraer's KC-390 transporter and FedEx's MD-10/11 commercial cargo fleet. In response to specific user requirements, we offer an advanced HUD technology for medium-size business jets such as the Challenger 604 and others.

Surveillance and VISINT Solution

WAPS is a high-resolution, Wide Area Airborne Persistent video Surveillance system (WAAPS) that continuously monitors, records and analyzes large area footprints, intercepts events and maintains multiple regions of interest (ROI) under constant surveillance with high spatial resolution. Multiple, simultaneous and independent users on the ground can access both real-time and back-in-time (stored) video events retrieved from the airborne platform. Users can also access large video archives of ongoing and past SkEye aerial missions, with video queries sorted by time, location and event. Comprehensive video processing and analytics capabilities such as Video Motion Detection (VMD) and Virtual Perimeter (safe zones) with alert mechanisms are fully supported by the system.

Next Generation Avionics

Packed with technical innovations, Elbit Systems' Cockpit NG is the result of the Company's decades of experience and expertise in creating advanced avionics concepts for the cockpits of tomorrow. Elbit Systems' Cockpit NG integrates a wide variety of helmet-mounted, heads-up and panoramic displays with advanced algorithms, sensor & data fusion and development tools. It is a complete, fully customizable, multi-mission cockpit that assures aircrews improved situational awareness, reduced workload and enhanced flight safety. Cockpit NG is designed to meet fighters, helicopters and transporter A/C future avionics demands.

Advanced combat training system for lead-in trainers as well as fighter aircraft.

C-130 Solutions – Mission capable for decades to come

Backed by over 25 years of experience in developing and integrating complex aerospace systems, and with worldwide presence on C-130s, Elbit Systems' C-130 solutions offer a winning blend of advanced avionics with best-of-breed mission systems, sensors, defense capabilities and more. Suited explicitly for the C-130 flight deck, Elbit Systems' solutions offer effective performance in tactical environments, while enabling safer and more effective mission execution as well as greater situational awareness. Elbit Systems' C-130 avionic solutions fully comply with modern civil airspace regulations, including CNS/ATM*, RNP and B-RNAV and D-GPS approach capabilities.

C-Suite Tactical – Enhanced mission and safety solution for the C-130

Elbit Systems' C-Suite Tactical is a flexible, modular avionics solution for C-130 aircraft providing accurate, real-time information projected on the head-up, head-down or helmet-mounted display. It enables safer and improved mission execution as well as greater situational awareness. C-Suite Tactical is made up of several unique systems based on a Digital Terrain Elevation Database (DTED) and real-time sensors, all aimed to enhance mission capabilities of low altitude tactical flights using Elbit Systems' head up display.

Elbit Systems EW and SIGINT

Elbit Systems EW and SIGINT – Elisra (Elisra) is a leading provider of advanced unified electronic warfare (EW) and signal intelligence (SIGINT) solutions for airborne and other applications. These solutions integrate and combine cutting-edge communications intelligence/direction finding (COMINT/DF), communications jamming (COMJAM), electronic support measures/electronic intelligence (ESM/ELINT) and electronic countermeasures (ECM) into a unified system-of-systems, delivering a new level of SIGINT and EW capabilities.

These solutions deliver a fast, complete and accurate intelligence picture and protect those operating in all threat environments, including onboard airborne and other platforms.

***Unique 600 gallon** external fuel tank and pylons for the F-16, enhancing its range and endurance.*

***PAWS™, the Passive IR Missile Approach Warning System,** is a highly effective family of operationally deployed staring IR missile approach warning systems.*

All-in-Small™ – Integrated Airborne Self-Protection System

Elisra's Airborne EW Self-Protection Suite for evolving threats comprises an embedded EW controller, advanced digital radar warning receiver, IR Missile Warning System (MWS), Laser Warning System (LWS) and chaff/flare dispensing system, all in a single LRU. All-in-Small is a modular, cost-effective, lightweight and compact solution with multiple interfaces and an open architecture. It can also be integrated with DIRCM and various future systems.

IR-CENTRIC™

Our IR-CENTRIC solution is a unique, measurable self-protection force multiplier for airborne and other applications. Utilizing the foundations of the de-facto standard in missile warning systems, IR-CENTRIC offers a multi-role, multi-function solution that transforms military capabilities. With its unprecedented interoperability, it provides users with the ability and freedom to define, redefine, reconsider and reconfigure mission objectives and outcomes. By enabling the redefinition of mission parameters and significantly shortening the sensor-to-weapon loop, IR-CENTRIC boosts crew survivability and safety in one single system while responding to modern operational requirements.

Military Aviation Aerostructures

Elbit Systems - Cyclone Ltd. (Cyclone), our Israel-based subsidiary, serves as our design and production center for metal and composite aerostructures, as well as sub-assemblies and assembly parts for leading military aerospace companies and OEMs. With more than 40 years of experience, Cyclone is a leading design and manufacturing center for military aircraft external fuel tanks (EFT), providing EFTs for platforms such as the F-16, F-15, F-18, CH-53 and AV-8. Cyclone also designs and produces unique assemblies – from flight control and aerodynamic surfaces, to doors and specialized aircraft parts. With our strong technical and engineering capabilities, supported by a rigorous LEAN system, Cyclone is a recognized specialist in build-to-print and build-to-spec aerostructures.Cyclone is certified for AS9100 Rev-C, ISO 9001 and ISO 14000. In addition, Cyclone's quality system is authorized by some of the largest OEMs such as Boeing, Lockheed Martin and Bombardier, as well as by Spirit Aerosystems, the U.S. Air Force, the U.S. Navy and many other AS9100-2000 advanced quality systems.

Elbit Systems is executing long-term Private Finance Initiative (PFI) and Power by Hour (PBH) projects for the Israel Air Force Flight Academy.

Flexible Flight Services

Training

Our military pilot training services cover basic to advanced training for helicopter and fixed-wing aircraft in Elbit Systems' worldwide facilities. We offer tailored packages for specific training needs, and we are able to establish a complete flight academy. Our flight training services include the provision and operation of ground-based full flight simulators and the introduction of advanced training technologies for the benefit of flight cadets.

We offer computer-based trainers, partial task trainers, full mission trainers and complete training centers that comprise mission planning systems, simulators and debriefing systems.

Our advanced combat training system introduces a cutting-edge training concept for lead-in trainers and fighter aircraft. Based on data-link technologies incorporated into navigation and display systems, our combat training system solution generates virtual sensors and systems, as well as multiple types of threats.

Logistics

Our aircraft logistics support encompasses a wide range of services, including contractor logistics support (CLS) and performance-based logistics (PBL). We also perform private finance initiative (PFI) programs in which we own, maintain and operate an entire fleet of aircraft and equipment and are reimbursed by customers based on flight hours.

Our experience with military aircraft upgrades and CLS programs enable us to maintain the aircraft in operational service by offering customers innovative solutions for grounded fleets. In a typical CLS program, we provide a "window in the wall" operation with guaranteed spares availability. Included in this concept are component repair, spares availability, on-site technical assistance, maintenance activities, training and documentation.

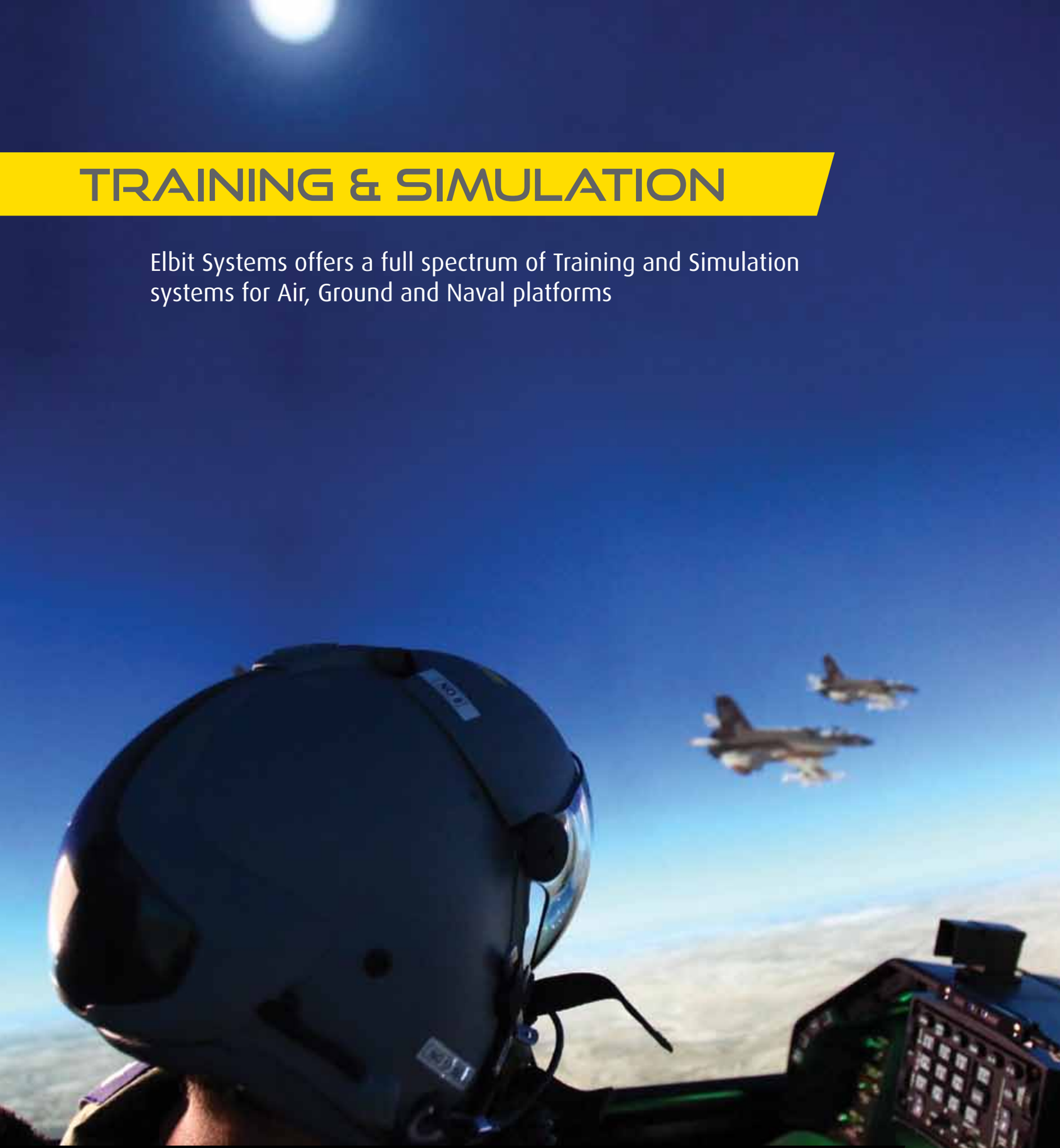
We offer a vertical array of flight services, including managing firefighting aircraft fleets, supplying flight-ready aircraft for military flight training or overhauling an aircraft. In addition, we continue to expand our capabilities and expertise for the benefit of our customers. M7, Elbit Systems of America's subsidiary located in San Antonio, Texas, provides global support for an array of medium and light U.S. Government air-lifters, including engineering services, logistics support, contracting, manufacturing, maintenance, repair and overhaul, aircraft parts and service support, aerostructures and supply chain management services.

2015 HIGHLIGHTS

- *Elbit Systems Awarded a Contract for the Maintenance of the Israeli Air Force's F-16 Avionics Systems*
- *Elbit Systems Introduces BrightNite™*
- *Elbit Systems Introduces Canary*
- *Elbit Systems Awarded Israeli Police Force Helicopters Project*

TRAINING & SIMULATION

Elbit Systems offers a full spectrum of Training and Simulation systems for Air, Ground and Naval platforms



SkyBreaker™ (Airborne Mission Training Center) – a fully networked solution for operational combat training.

FULL

SPECTRUM OF TRAINING AND SIMULATION SYSTEMS

for Air, Ground and Naval platforms

Full Spectrum of Training and Simulation Systems for Air, Ground and Naval Platforms

The global war on terror, along with the threats posed by urban warfare, demand smooth interoperability among forces on all fronts. Our joint forces tactical training solutions prepare forces for rapidly changing scenarios that necessitate instant, coordinated responses and the ability to handle unpredictable events.

As an acknowledged leader in the field, we build on over three decades of experience in training and simulation programs. We offer comprehensive solutions that span the military spectrum and have the unique advantage of being based on actual operational systems that we develop, manufacture and supply. Designed by pilots, tank commanders and naval officers, our systems recreate conditions, systems and munitions, which translate into increased force readiness. We employ the latest technologies and training concepts, including advanced computer generated forces (CGF) and C^{4}I system exploitation to produce high-fidelity, virtual environments as close to reality as it gets.

Our training and simulation solutions range from mission preparation, through execution, to post-mission debriefing and analysis. Using a building block approach that incorporates commercial-off-the-shelf (COTS) components and specially designed simulation modules, our total tailored solutions are designed to evolve along with our customers' needs. Simulator operation and maintenance are part of the total package.

Elbit Systems' next-generation, high-fidelity simulators for rotary and fixed-wing aircraft.

Aircraft Mission Training Center (MTC)

Our Mission Training Center (MTC) is a fully networked solution for modern combat training. A multi-cockpit, mission-oriented training center, the MTC provides realistic simulated aircraft training using a variety of aircraft systems and realistic mission scenarios to enhance the training of pilots at all levels.

As a world leader in field-proven training and simulation solutions, we developed the MTC in order to present aircrews with high-fidelity, simulator-based training, while saving actual flying hours.

The MTC houses a complex interconnected system designed to provide pilots with the tools necessary to practice modern air combat using sophisticated CGF in a fully-integrated military setting.

Developed by current and former Israel Air Force pilots with vast operational experience, our arena generator is capable of running more than 3500 entities, including smart entities with a market leading level of artificial intelligence.

The MTC covers all stages of a mission, including planning, rehearsal, training and debriefing.

Aircraft Embedded Training Systems

Our suite of Aircraft Embedded Training Systems, including Embedded Virtual Avionics (EVA) and an In-Flight Electronic Warfare Simulator (IFEWS), equip fighter aircraft, trainer aircraft, transport aircraft and helicopters with leading-edge advanced airborne simulation. This suite provides maximum training effectiveness and unparalleled cost-efficiency.

- **Embedded Training for Trainer Aircraft** – Transforms basic/advanced trainer aircraft into 5th-generation virtual fighter aircraft
- **Embedded Training for Fighter Aircraft** – Stimulates real aircraft sensors (radar, EW suite, etc.) providing a hybrid real and virtual environment
- **Embedded Training for Helicopters** – Provides extensive sensor simulation including an EW suite, electro-optic and thermal imaging systems, radar, FLIR, ESM, C4I systems, active/passive sonar, and CSAR

Incident Command Team Training System (HLS-ICTTS)

Virtual Training

Elbit Systems offers a full range of next-generation high-fidelity simulators for rotary and fixed-wing aircraft.

Built on the accumulated experience of in-service and retired Israel Air Force pilots, our complete range of training products include computer-based trainers (CBT), flight training devices (FTD) and full flight simulators (FFS).

These high-end COTS-based systems provide pilots and cadets with customized and comprehensive simulation for the full range of their training needs.

Our solutions are designed to train pilots on all basic and advanced procedures, beginning with start-up, taxi and takeoff, and continuing with emergency procedures, instrument flight rules and stand-alone tactical training. An established track record in delivering training and simulation solutions, combined with a comprehensive range of customizable systems, enables us to deliver cost-effective solutions tailored to our customers' needs.

Air Defense Training Solutions

Our comprehensive suite of field-proven products for advanced air defense training delivers a superior training and simulation experience for air defense weapons stations and command and control (C^2) personnel of all levels. These products are available for both standalone and integrated implementation and can be tailored to each customer's unique characteristics and requirements. Embedded into actual firing units, the Live Air Defense Training System allows participants to train at their weapon stations within a virtual environment.

Incident Command Team Training System (HLS-ICTTS)

Our homeland security (HLS) simulation solutions realistically simulate complex emergency scenarios where multiple security and rescue teams must seamlessly coordinate their life-saving operations, in both virtual arenas and live training environments.

The systems simulate a variety of interactive security incidents including terror attacks, accidents, natural disasters, dispersion of hazardous materials, attacks on strategic infrastructure, security for large scale sporting events and maintenance of public order.

Live Combat Training System (LCTS) *provides a comprehensive solution for joint tactical force-on-force live training.*

Tactical and HQ Training

Our tactical and collective team training systems incorporate the knowledge and experience required to enhance and maintain the quality of a modern fighting force. Combining cutting-edge tactical battlefield simulation with actual command, control and communications (C^3) systems, our advanced Command and Staff Trainer (CST), Tactical Battle Group Training System (TBT) and Forward Observer Trainer (FOT) adapt to a wide range of combat scenarios including high-intensity conflict (HIC), low-intensity conflict (LIC), counter-terror operations, operations other than war (OOTW) and (HLS) – all within any operational environment.

Land Forces Live Combat Training System

Our Live Combat Training System (LCTS) for land forces provides a comprehensive solution for joint tactical force-on-force live training. LCTS offers a realistic, unified, live training environment that is fully independent and easily deployable. The system enables efficient training in various terrains – including urban areas – without the need for any on-site installation. The fully integrated training system combines laser suites for dismounted infantry and armored vehicles, independent broadband communications and control center capabilities.

Platforms and Weapon Operators Training Systems

Our Platforms and Weapon Operators product line offers a wide range of proven solutions for the training of formations, crews, commanders, gunners and drivers. Suitable for a variety of platforms and weapons, the land forces training systems are deployed worldwide, and include embedded, independent and appended tank crew trainers, driving simulators and infantry gunner training systems.

Naval Training Center

Our Naval Training Center (NTC) is a full-scale turnkey training solution, offering operational and tactical simulation that facilitates a comprehensive and realistic naval training experience. The NTC is comprised of a naval tactical trainer (NTT), a navigation simulator and a close-range weapon trainer (CRWT). These modules can each be utilized in standalone mode or combined and integrated with additional systems for large-scale exercises.

Naval Combat Maneuvering Instrumentation (NCMI)

Modern naval combat requires a high-level of expertise in all modes of littoral and maritime warfare. NCMI is a live training system that encompasses different combat systems. NCMI also stimulates superimposed detections of virtual targets while displaying actual detections on the operational systems. The exercise is distributed via a dedicated data-link simulation network to all participants.

Forward Observer Trainer (FOT) *designed to offer a simulated training environment for field intelligence and artillery FOs, enabling a complete simulation of real-life battlefield situations, including joint fire planning, ranging and operating, as well as target identification, acquisition and engagement in a variety of operational scenarios.*

Electronic Warfare Simulation Center

Our EW Simulator Center is equipped with special training and simulation airborne laboratory facilities to test, train and demonstrate EW suites, both on the ground and on-board aircraft. REGEV – Realistic EW Generation and Evaluation Simulator – is an EW environment simulator that utilizes sophisticated radar signals to replicate complex, dense training scenarios typical to modern conflict zones.

Full Spectrum of Services

Our field-proven training and simulation systems are known for being best-in-class among next-generation, high-fidelity virtual and live training solutions. We offer a full spectrum of training services and support to ensure that customers who have purchased products or services – either from Elbit Systems or from third parties – acquire the necessary skills for effective operation and optimum performance.

2015 HIGHLIGHTS

- ***Elbit Systems Provides RUAG Defence with an Advanced Cyber Security Simulator***
- ***Elbit Systems to Deliver Realistic Combat Training System to Poland's Special Operations Forces***
- ***Elbit Systems Delivers Additional Full Mission Simulators to the Israeli Ministry of Defense, for IAF's Ground Based Training System Center***

UAS

At any moment, at least 20 of our UAS are airborne around the globe...

HERMES™ 900 *– Multi-role, Medium-Altitude Long-Endurance (MALE) UAS.*

Sophisticated capabilities and onboard systems

TO MEET THE COMPLEX CHALLENGES

Elbit Systems' comprehensive range of unmanned aircraft systems (UAS) offer unprecedented mission flexibility – from man-portable mini-UAS, through versatile tactical UAS, to medium altitude long endurance (MALE) UAS and powerful naval solutions.

Our UAS have earned international recognition and play an increasingly vital role in the global war on terrorism. Military and homeland security forces worldwide benefit from our sophisticated capabilities and onboard systems, which are taking on many of the complex challenges previously performed solely by manned systems. Our extensive experience and innovative approach to all aspects of unmanned systems result in outstanding operational solutions for our customers.

We offer in-house design, development and production of nearly all subsystems and components required for complete unmanned systems solutions. These solutions range from mini to MALE UAS, various unmanned boats and a variety of Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) solutions.

Multi-mission capabilities

From field to operational levels, we are a leading source of turnkey solutions, maintenance and support, advanced air vehicles, ground control stations, major system hardware and software, UAS trainers, EO/IR Laser payloads, ELINT and COMINT payloads, SAR/GMTI and MPR payloads, UAS training and simulation systems, data links, remote video terminals and UAS engines.

The mature, operational Hermes™ family of UAS for MALE and high-end tactical UAS missions, along with the Skylark™ family of UAS for close-range tactical missions, provide a comprehensive range of integral solutions for diverse operational needs.

HERMES 900 - Multi-role MALE UAS

Our next-generation MALE UAS features over-the-horizon, multi-mission, multi-payload capabilities with a class-leading payload carrying capacity of 350 kg. It is capable of performing missions for area dominance, persistent ISTAR, ground support and maritime patrol, and offers the capability for integrated multi-platform, multi-sensor operation. Based on the heritage of over 300,000 operational flight hours of the Hermes 450 UAS, the Hermes 900 employs identical building blocks, using a larger air vehicle with nearly double the capabilities. Its flight ceiling reaches 30,000 ft., with endurance of up to 36 hours, and a mission radius of up to 300 km, extendable to the limit of fuel capacity using SATCOM.

Hermes™ 450 *Tactical Expeditionary UAS.*

Hermes 450 Tactical Expeditionary UAS

Hermes 450 is a multi-role UAS. It is equipped with our CoMPASS™ EO/IR/LD gimbaled electro-optical payload and can adapt to a wide range of payloads, including SAR/GMTI radar, ELINT, COMINT and various dual payload configurations. Highly portable and easily deployed by maneuvering forces, Hermes 450 is controlled by the Hermes Universal Ground Control Station (UGCS), and can autonomously execute diverse and concurrent missions. Its internal Auto Takeoff and Landing (IATOL) system enables auto-landing even on alternate semi-prepared strips. Hermes 450 is recognized as the leading expeditionary tactical UAS in its class, having flown operationally in numerous countries, including the US and UK civil airspaces. Hermes 450 was the first UAS certified to fly in Israeli civil airspace. To date, Hermes 450 has accumulated more than 300,000 operational flight hours, attesting to its popularity and enthusiastic adoption worldwide.

Hermes 90 – Close Range, Long-Endurance UAS

The Hermes 90 UAS, the smallest member of the Hermes family, was developed as a cost-effective, low-signature, tactical UAS for maneuvering forces. It leverages the successful design of the Skylark UAS as well as the capabilities of the Hermes family. It incorporates the common features found across our entire UAS portfolio, such as a high level of autonomy, small logistic footprint, ease-of operation and reliability. In addition to standard runway operation, dual-launch and recovery modes enable point takeoff from a launcher. The Hermes 90 features up to 15 hours of long endurance with a mission range of up to 100 kilometers.

Skylark I-LE Mini-UAS

Skylark I-LE is an electrically-propelled and highly covert mini man-pack UAS providing ISTAR capabilities to tactical echelons. Skylark I-LE supports open areas, as well as urban warfare scenarios, for wartime, peacekeeping, low-intensity conflicts, security and disaster management applications. Skylark I-LE is equipped with features derived from our Hermes family of larger UAS such as a gyroscopic stabilized gimbaled payload and a high degree of autonomous flight. Skylark I-LE is fully battle proven and operational in several theaters of the global war on terror, including Iraq and Afghanistan. Skylark I-LE systems are used by over 20 customers worldwide with over 20,000 successful operational sorties and numerous high altitude flights exceeding 15,000 feet.

UAS Ground Control System

The ability to efficiently and accurately handle vast amounts of data is critical for today's mission control systems. Elbit Systems' cutting-edge UAS ground control system (GCS) was designed to handle this need. The GCS efficiently processes the flow of information from the multiple sensors installed on our advanced Hermes UAS, without impacting the operator load. Our advanced GCS is comprised of seven work stations. These stations enable the simultaneous operation of two independent missions by controlling up to four tactical and MALE UAS. The flow of data from the various sensors installed on these UAS (such as EO, RADAR, SIGINT and others) is received, processed and disseminated to decision makers. Incorporating over three decades of our operational UAS experience, this UAS GCS is a "one-stop-shop" solution for operating in today's complex ISTAR arenas.

Skylark™ I-LE Mini-UAS

***Hermes™ 90** – Close Range, Long-Endurance UAS*

***Skylark™ 3** – Light UAS*

UAS Ground Control System (GCS)

Skylark 3

Skylark 3 is a new autonomous mini-Unmanned Aircraft System (UAS). It is best suited for brigades and divisions in "beyond the next hill" reconnaissance, counterinsurgency and force protection missions, as well as for use in a range of civil applications, such as border and coastal security and antiterror operations.

The new system has already been selected by a customer. Leveraging the proven technology and operational experience of Elbit Systems' Skylark family of mini-UAS, Skylark 3 offers a wide range of system enhancements, including a significantly larger range (more than 100 km), flight endurance (up to 6 hours) and payload capacity (up to 10 kg). Launched via a pneumatic launcher, mounted either on the ground or on a vehicle, Skylark 3 offers upgrades such as improved payloads with better target detection, classification and surveillance capabilities. These deliver superior Electro Optical/Infrared (EO/IR) video and photographic imaging in both day and night operations and in adverse field conditions.

The UAS incorporates an electric motor, which reduces sound signature and enables operating over long distances and at high altitudes.

Data Links

We offer advanced wireless communications systems for manned and unmanned aircraft, guided weapons, space platforms and satellite communications earth stations, as well as unique search and rescue (SAR) systems for combat and non-combat applications.

2015 HIGHLIGHTS

- ***Elbit Systems Introduces Skylark™ I-LEX***
- ***Elbit Systems Awarded a Contract to Provide a European Country with UAS-Based Advanced Intelligence Systems***
- ***Elbit Systems Awarded a Contract for the Supply of Intelligence Integrated Systems to a Latin American Country***
- ***Elbit Systems Awarded a Contract for the Supply of Hermes™ 900 HFE UAS to Switzerland***
- ***Elbit Systems Awarded a Contract to Provide an Asia-Pacific Country with a Complete Tactical ISTAR Solution***

LAND SYSTEMS

Elbit Systems' reputation as a leader in solutions for land forces is based on more than four decades of experience.

*The **UT30MK2** is a fully overhead configurable unmanned turret capable of transforming armored personnel carriers into armored fighting vehicles – with no vehicle deck penetration whatsoever. The Remote Control Weapon Stations Family 7.62 is a lightweight, stabilized weapon station for integration into various platforms. The unique design is based on extensive battlefield experience in full scale and low intensity conflicts and underscores Elbit Systems' leadership in the field of turret and fire control systems.*

A MARKET LEADER

in solutions for land forces

We produce one of the most diverse and comprehensive ranges of land-based sensors and systems in the industry. Our total solution concept covers the entire spectrum of combat vehicles, from complete modernization and training to maintenance depots and life-cycle support services.

Combat Vehicle Modernization

Building on advanced in-house capabilities and core technologies, we are a one-stop source for net-centric compatible solutions, including target acquisition, battle management, laser warning, weapon stations, surveillance, fire control (FC), turret drive, and a full range of countermeasures. We also offer life support systems (LSS), chemical, biological, radiological and nuclear (CBRN) protection, automotive improvements and robotics. We supply our advanced land systems both as turnkey solutions and on a stand-alone basis to other defense contractors. Our comprehensive solutions cater to all types of combatant forces and can be integrated into existing platforms. In order to adapt and develop control systems and electronics for combat vehicles, we have integrated technologies based on our experience in advanced avionics and electro-optics. We also provide complete communications upgrades to armored fighting vehicles (AFV). Our innovative solutions include the following product suites:

UT30MK2: The UT30MK2 is a configurable unmanned turret, adding effective firepower to armored personnel carriers (APC) without compromising troop safety. Built on the success of a fully combat-proven turret in use by numerous armed forces around the world, the UT30MK2 is the latest generation armament system developed by Elbit Systems. The modular design enables unmanned and manned turret configuration with easy conversion. Designed with a very low profile, the UT30MK2 encompasses a broad range of weapon systems, countermeasures and advanced electro-optics all developed in-house to deliver reliable, high performance firepower on the battlefield.

Remote-Control Weapon Stations Family: Our Remote-Control Weapon Stations (RCWS) family is designed for dynamic or static operation, and for use on stationary posts, ground or naval platforms. The high precision, lightweight, low-profile RCWS can be mounted on any AFV, main battle tank (MBT) and support platform without roof penetration. The RCWS is operable from within the vehicle by the gunner using handles and a multi-functional display (MFD). With this configuration, the dual-axis and fully stabilized (optional) RCWS delivers high speed engagement, single phase aiming, and an exceptionally high hit probability without operator risk exposure. Based on in-house electro-optics, the weapon system offers superior performance in open areas, as well as urban or mountain warfare scenarios, including anti-aircraft engagements.

The RCWS family can be adapted to a wide variety of weapon types of both Western and Eastern origins, including 7.62mm, 12.7mm caliber weapons and 30 or 40mm Automatic Grenade Launchers.

Elbit Systems develops and supplies a family of fire control systems for modernized and upgraded main battle tanks, medium and light tanks, and light armored vehicles. Migrating our experience from advanced avionics systems, Elbit Systems adapts and develops control systems and electronics for combat vehicles.

***Combat NG** is a C⁴I system for field artillery. Designed for deployment from platform to brigade level, it manages all aspects of artillery operations. The system is capable of supervising all units' resources and supporting decision making at tactical and operational levels. Combat NG ensures faster response time and increased survivability.*

Surveillance, Reconnaissance and Targeting

Our extensive range of warning and protection systems supports effective and timely responses to laser and radar-guided threats. Offering 360-degree threat coverage, the systems include a full array of soft-kill and hard-kill countermeasures. The wide range of systems can be tailored to provide the required degree of accuracy and meet a broad array of threats. Easily fitted to all AFVs, the systems are able to detect, categorize and pinpoint laser and radar/RF sources such as rangefinders, designators, beam riders, infrared illuminators and trainers. Using a combination of decoys, smoke, electro-optical signals, infrared or laser jamming, the systems effectively neutralize incoming missiles. An essential component of the vehicle's defensive capabilities, they feature audio and visual warnings, high-detection probability and a low false-alarm rate.

Life Support Systems

Auxiliary Power Units (APU)

Elbit Systems - Kinetics (Kinetics) APU is a critical component in both new and upgraded MBTs and AFVs. The APU boosts the power supply to advanced systems without operating the main engine, and supplies additional power to the platform's generation capabilities. The APU's range of features includes silent mode operation and a reduced thermal signature, saving fuel consumption and logistics costs. Kinetics offers a comprehensive array of APUs designed for heavy duty military applications. Field-proven worldwide, these units offer significant operational benefits to modern fighting forces, even in harsh environmental conditions.

Life Support Systems (LSS)

Elbit Systems-Kinetics (Kinetics) also offers an "all-in-one compact design" integrated APU and LSS system. The Kinetics LSS incorporates chemical, biological, radiation and nuclear (CBRN) protection as well as heating, ventilation and air conditioning (HVAC). The LSS can be powered by the platform engine or self-propelled with an APU. Kinetics develops, qualifies and produces field systems and components for a broad range of tracked, wheeled, and stationary military platforms.

Fire Control Systems

We have developed and supplied generations of fire control systems (FCS) for MBTs, medium tanks, light tanks and light armored vehicles that have repeatedly met the test of combat. Our sophisticated suite of FCSs features long-range,

***Soltam ATHOS** is a long-range 155mm/52 caliber autonomous towed howitzer capable of a range greater than 40km.*

day and night, on-the-move high first-round hit probability against moving targets. Reliable and cost-effective, the systems range from simplified FCS for one-man light turrets to high-performance hunter-killer FCS for front-line MBTs.

Every FCS is configurable with battle management systems required for use in net-centric warfare.

Artillery

Fully-integrated, modular artillery solutions – delivering effective, highly-accurate fire support

We offer a comprehensive array of fully-integrated, modular artillery solutions that incorporate smart technology, automatic laying and loading capacity, FCS and modular weapon products. Outfitted with enhanced ballistic computers, along with navigation and target acquisition equipment including battery and battalion command posts, our artillery solutions are easily integrated into customers' C^4I systems. These combat-proven solutions have seen extensive use by the U.S. Army, NATO, the Israel Defense Forces and other leading ground forces.

Extensive integration expertise combined with in-house development enables Elbit Systems' hardware components, communications systems and applications to adapt to a wide range of platforms. All products can be tailored to customer specifications.

Customers with existing infrastructure can benefit from our platform upgrades which enhance the performance and capabilities of existing artillery systems in order to meet modern battlefield requirements. We support multiple firing platforms – including guns that are towed, tracked, truck-mounted, self-propelled or independently propelled by an auxiliary power unit (APU) for self-maneuvering.

Soltam ATMOS is a 155mm/52 caliber truck-mounted howitzer that offers the advantages of superior fire power, enhanced mobility and rapid response time. The ATMOS fire range exceeds 40km with ERFB-BB ammunition and a suitable propelling charge. Designed specifically for rapid deployment and operation on difficult terrain, the ATMOS's shoot-and-scoot capabilities are supported by an integrated electronic suite incorporating an INS-based laying system, as well as an automatic loading system that reduces crew effort. The ATMOS can be mounted on any adapted high-mobility 6x6 or 8x8 truck chassis preferred by the customer.

Soltam ATHOS is a long-range 155mm/52 caliber autonomous towed howitzer capable of a range greater than 40km. The gun utilizes inertial navigation and aiming systems, including a GPS and an onboard firing computer

Soltam SPEAR *Designed for high mobility platforms, SPEAR is a fully autonomous, vehicle-mounted 120mm soft recoil mortar system.*

as part of its autonomous capabilities. It achieves automatic control, automatic laying, accurate navigation and target acquisition. When deployed in the battlefield, the ATHOS can maneuver itself using its own diesel engine and special hydraulic-driven road wheels which are also ideal for shoot-and-scoot positioning. The hydraulic system enables a team of seven crew members or less to deploy the ATHOS within minutes.

Soltam Cardom 81/120mm for Infantry Battalion and Brigade Levels

A 120mm autonomous self-propelled recoiling mortar system with auto-laying capabilities, the Cardom solution is muzzle-loaded and turntable-mounted. It has been in extensive use by the U.S. Army, NATO, the Israel Defense Forces and other leading ground forces.

Compatible with a variety of fire control systems and inertial navigation systems, the Cardom can fire a first round in less than one minute and 16 rounds in 'burst' succession, allowing for rapid deployment. Designed for heavy and medium platforms, the system can be integrated with forward observers or UAS for quick target acquisition or target prioritization in various operational modes.

Soltam Spear 120mm on Light Platforms

Soltam SPEAR: Designed for high mobility platforms, SPEAR is a fully autonomous, vehicle-mounted 120mm soft recoil mortar system. SPEAR delivers effective fire support by combining the flexibility of accurate mortar fire with exceptional tactical mobility. Equipped with our revolutionary, patent pending recoil system that reduces the 120mm barrel's firing loads from 120 tons to less than 10 tons, SPEAR can be mounted on a variety of high-mobility light vehicles.

Ground Deployed Mortars 60/81/120mm

We offer a wide range of mortar systems designed to suit a variety of battlefield scenarios. Our lightweight mortars are effective support weapons for close, medium, long and extended-range shooting – making them highly effective for special forces, commando units and infantry battalions. User-friendly, quickly deployed and reliable in all weather conditions, the mortars are operated with a light handheld fire control system. The mortar systems are available with the auxiliary equipment necessary for field operation.

***Soltam ATMOS** is a 155mm/52 caliber truck-mounted howitzer that offers the advantages of superior fire power, enhanced mobility and rapid response time.*

***FOXTRACK™** – a portable Ground Surveillance Radar System – is a lightweight, compact, man-portable radar carried by two operators soldiers, special operations forces or security personnel.*

MRJ – Miniature Reactive Jammer Family

The MRJ Family, the latest generation of protection systems against Remote Controlled Improvised Explosive Devices (RCIEDs), has been developed to protect ground forces, homeland security entities, special forces, penetration units, small vehicular convoys, border patrols and other forces entering hostile areas. The systems can be configured to jam RCIEDs in either reactive or active modes, or a combination of the two, working simultaneously.

Ground Radars

We provide an array of specialized Ground Surveillance Radar (GSR) systems that can be integrated with ISR ground solutions. Foxtrack™ is a lightweight, compact, man-portable radar that is installed on a vehicle mast or as a tripod-mounted configuration. Our FPR-10 radar provides long-range, accurate, high resolution detection of vehicles and personnel behind foliage.

When unattended configuration is required, our TALOS and MTR radar solutions can be utilized.

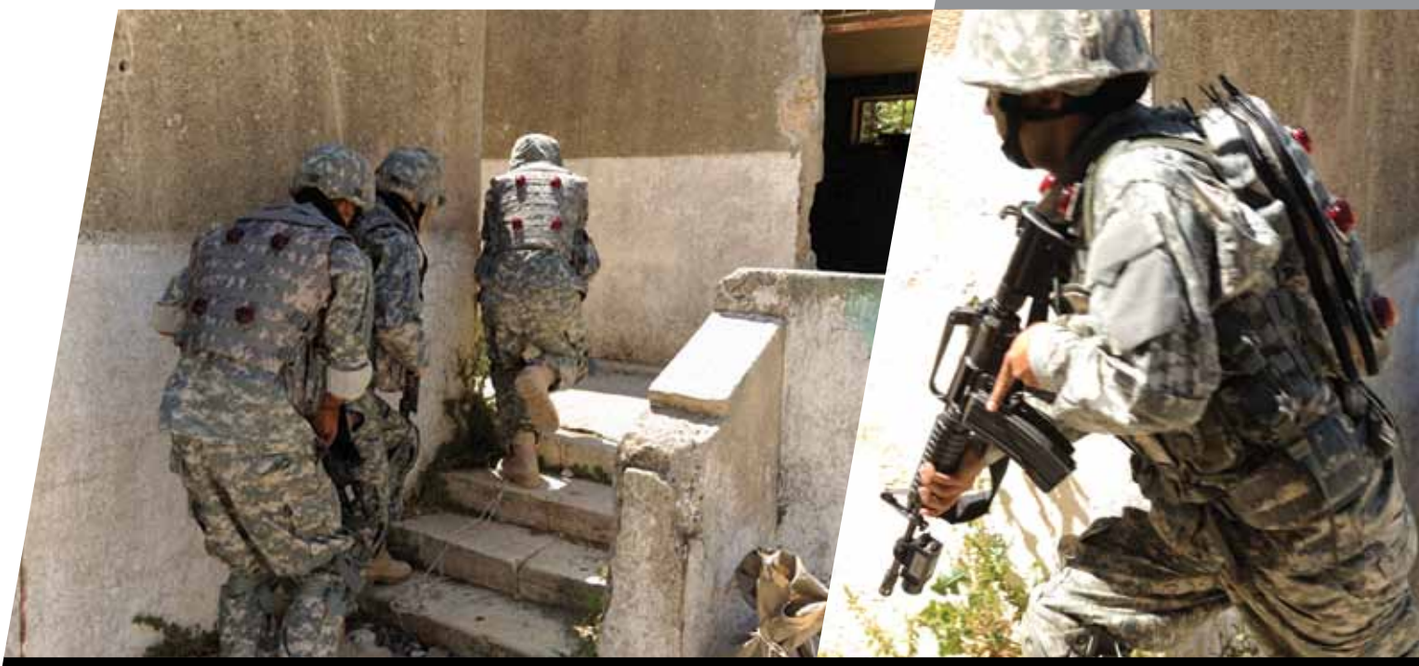
Autonomous Systems

The Stereo Vision System (SVS) allows unmanned ground vehicles (UGV) to autonomously detect and classify image-based objects. With a significantly lower total cost of ownership (TCO) than competing systems, the SVS features the latest innovations in hardware, software and robotic imaging technology. The SVS is ideal for ground platforms that require autonomous perception capabilities, including a wide range of military, industrial and commercial vehicles. The SVS is field-proven and fully operational in a number of unmanned systems worldwide, including the successful Guardium UGV.

GroundEye™

Our high-resolution, wide area panoramic ground persistent video surveillance system brings surveillance and security to the next level. GroundEye continuously monitors, records and analyzes large footprint areas, intercepts events and maintains constant surveillance of multiple regions of interest. Installed on high masts, towers or as a mobile configuration, GroundEye provides operators with information and tools that were previously unavailable or difficult to obtain, adding another dimension to the overall situational awareness.

GroundEye™



Live Combat Training System (LCTS) *provides a comprehensive solution for joint tactical force-on-force live training.*

Training and Simulation

Learning to operate today's advanced C⁴I combat systems and sensors demands rigorous practice and robust training tools. Our ground-based training and simulation solutions are geared for separate entities or entire battle groups. Their realism and overall effectiveness have enhanced operational performance of forces worldwide.

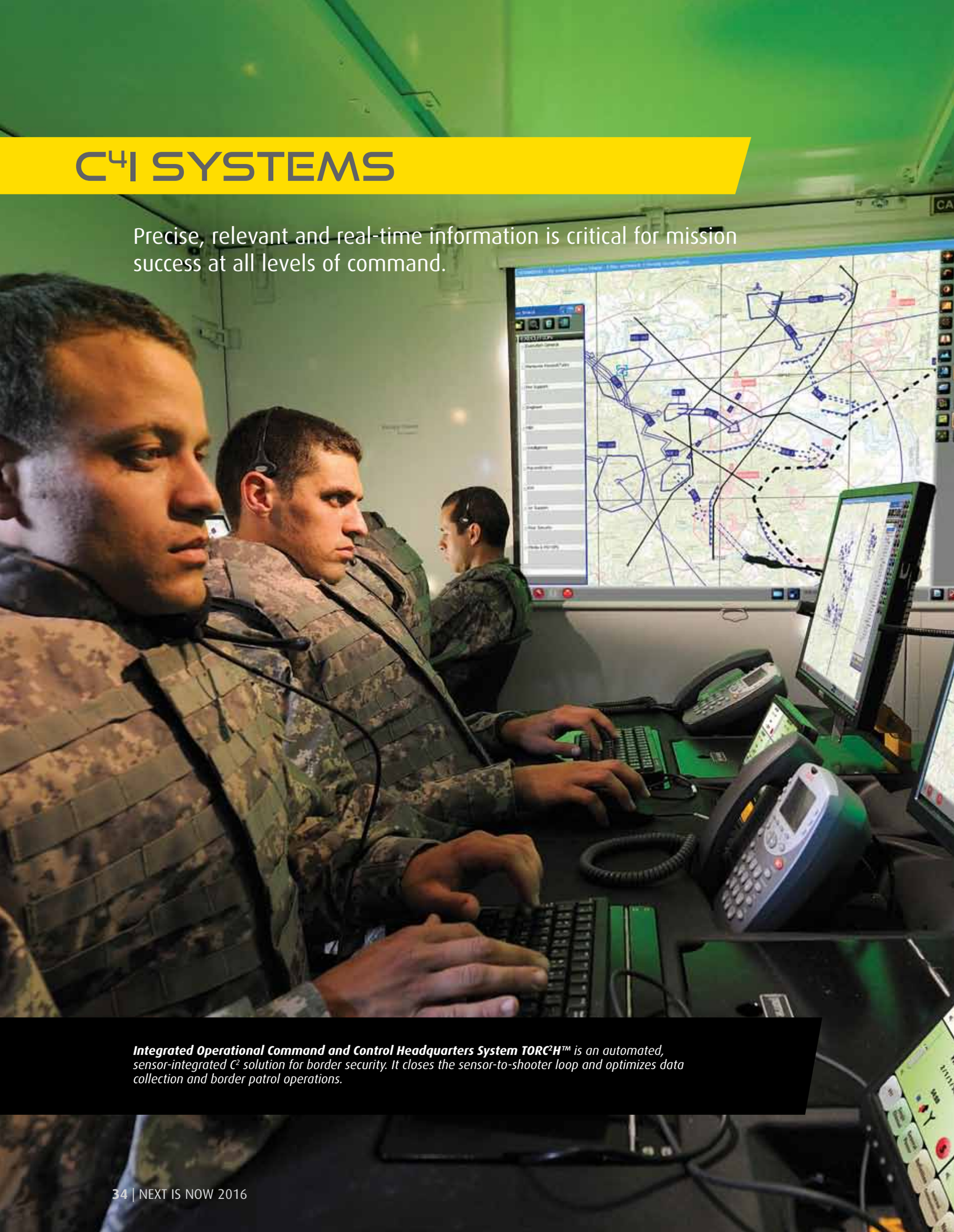
- **Appended Tactical Crew Trainer (ATCT)** enables cutting-edge training and mission rehearsal on-site. The compact unit connects to the actual combat vehicle and systems, providing a complete simulation environment for the crew.
- **Tactical Battle Group Trainer (TBT)** is a highly effective solution for training commanders and staff from the company level to battalion/battle groups and brigade-sized operations. Combining tactical battlefield simulations with actual C⁴I systems, the TBT's unique concept enables the battle group leaders to acquire tactical reasoning methods, skills and procedures.
- **Live Combat Training System (LCTS)** provides a comprehensive solution for joint tactical force-on-force live training. LCTS integrates laster suites for dismounted infantry and armored vehicles, independent broadband communications and control center capabilities.

2015 HIGHLIGHTS

- *Elbit Systems Awarded a Contract to Supply Advanced Systems to the Armed Forces of the Benelux Countries*
- *Elbit Systems Awarded a Contract to Supply Command and Control and Artillery Systems to an Asia-Pacific Country*

C4I SYSTEMS

Precise, relevant and real-time information is critical for mission success at all levels of command.



Integrated Operational Command and Control Headquarters System TORC²H™ *is an automated, sensor-integrated C² solution for border security. It closes the sensor-to-shooter loop and optimizes data collection and border patrol operations.*

DIGITIZED BATTLESPACE

for maximization of combat force EFFECTIVENESS

The nature of modern warfare requires a digitalized battlespace that fully supports the entire spectrum of military operations. However, the vast amounts of data flowing through military networks have given rise to a new challenge – the need to channel the data properly for effective decision-making at all levels.

As a world leader in the implementation of the digital army doctrine, our renowned C⁴I solutions connect all forces on land, air, and sea – from high-echelon HQ to the individual platform, sensor and soldier – creating a force multiplier by maximizing combat resource coordination.

Mission success at all levels of command

Our suite of C⁴I solutions provide actionable, real-time information and enables situational awareness, in-depth collaborative mission planning and management, and a constantly-updated common operational picture (COP). Our land, naval and airborne C⁴I systems offer solutions that deal with modern-day challenges (e.g., terrorism, urban warfare, guerilla warfare, and complex terrain). The solutions implement advanced combat concepts that increase operational effectiveness and connectivity – combining logistics, mission planning and fire support in one single system.

We have developed expertise in digitized battlefield C⁴I by applying advanced technologies in combination with COTS hardware and software packages. Our systems employ a tactical building-block approach to link various applications and levels of command, implementing a net-centric concept. Configurations comprise tactical computers, digital maps, message-handling systems, border surveillance, advanced communications controllers and modems, as well as various components developed for customer-specific needs. We also provide software infrastructure and applications for mobile and airborne platforms, for the individual soldier, and for headquarters command and control (C²) applications. Based on these core technology building blocks, we offer our customers comprehensive integrated solutions of C⁴I for land forces at all levels. The systems process, manage and present massive amounts of data arriving from various sources into a user-friendly format. We also provide a full range of simulators and customizable training programs.

Dynamic solutions that bring proven results

All of our C⁴I solutions are based on in-house, battle-proven systems and products, allowing us to maintain a customer-centric approach to meeting the challenges of the modern, complex and dynamic battlefield operational requirements of our customers. Based on an open architecture, the solutions are highly scalable, seamlessly integrating with existing systems, communications infrastructure and sensors. Our solutions comply with international military standards for soldier-based systems, vehicles and integration with third-party solutions.

Elbit Systems' Weapon Integrated Battle Management System (WIN BMS) *enables coordination between fighting vehicles and provides situational awareness to peacekeeping operations and maneuvering forces, including combat vehicles, engineering corps and logistic support personnel.*

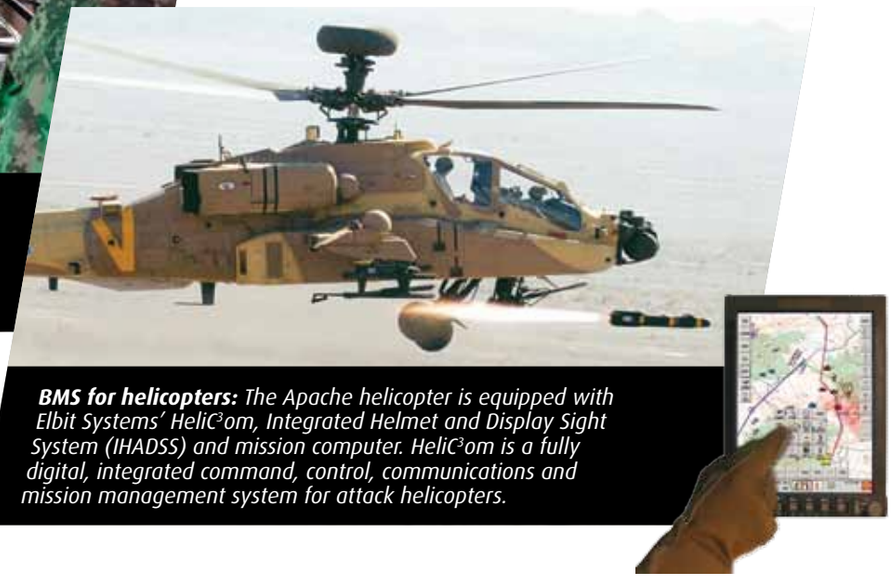
Elbit Systems' Enhanced Tactical Computer (ETC) *brings the power and versatility of advanced personal computers to the field. Its sun-readable display, multiple I/O capabilities and full military-grade environmental specifications make it an effective solution for combat C^4I terminals.*

As a global leader in soldier systems, our solutions are deployed around the world including NATO countries and the Five Eyes Community. Our massive investment in R&D as well as a clear C^4I technology roadmap has enabled us to deliver mobile, tactical, triple-play and cloud-based solutions that exploit Big Data capabilities for the ultimate in military effectiveness.

Bringing together the tools, tactics and technologies to deliver a significant operational advantage, our advanced C^4I systems for battlefield management include:

- **HQ Command and Control Solution:** Our cross-platform HQ solution is an automated, sensor-integrated C^4I system for all types of combat scenarios and border security. The solution provides real-time data with automatic dissemination by geography and hierarchy. Operational activities are optimized with common situational awareness, e-mail, command dissemination and decision support tools for all units, including headquarters, commanders, platform-mounted and dismounted teams, sensor operators, and border patrols. The HQ solution is an essential tools for closing the sensor-to-shooter loop, optimizing data collection and enhancing operational effectiveness. In addition, the system facilitates operational debriefing tool to record, replay and save features. Modular, scalable and upgradable, our HQ C^2 Solution is based on an open architecture, seamlessly integrating with existing systems, communications infrastructure and sensors. The system was selected by the Israel Defense Forces (IDF) for all types of operational, combat and border C^2 activities and is currently deployed and operational in IDF units and along Israel's borders.
- **WinBMS:** Our networked Weapon Integrated Battle Management System enhances the connectivity and coordination of maneuvering forces at the tactical level. The WinBMS advanced suite of hardware and software products integrates the combat vehicle's sensor and weapon systems with the Battle Management System (BMS) in real-time, upgrading the capabilities of the combat platform and increasing the combat effectiveness of the combined forces. WinBMS enables sensor-to-shooter closure in an efficient manner and minimal cycle time, achieving network warfare superiority. A mature and battle-proven solution, WinBMS has been successfully integrated into a variety of tracked and wheeled vehicles worldwide and is well integrated with a broad spectrum of weapon systems, sensors and radios from a range of manufacturers and vendors. The WINBMS modular architecture and extensive knowledge base makes it simple to integrate with additional vehicle types as well as with new weapons and other platform systems.
- **Combat-NG:** The latest generation in the series of C^4I systems for field artillery, Combat-NG establishes an autonomous artillery array, achieving an effective fire support process. Managing all aspects of artillery operations, it is designed for deployment from the platform to the brigade level. In addition to capabilities that include supervising all unit resources and supporting decision-making at tactical and operational levels, Combat-NG ensures even faster response time and increased survivability. Combat-NG is designed to support a wide range of artillery platforms including self-propelled and towed guns, as well as mortars and rocket launchers. The solution is fully combat and field-proven with customers worldwide.
- **TMR™ Max:** Our tactical multimedia router is an all-in-one, compact middleware solution for disseminating

The TACTER 31D™ *tactical computer is an essential C² tool for the digital battlefield, ensuring complete continuity across vehicle-mounted and dismounted applications.*



BMS for helicopters: *The Apache helicopter is equipped with Elbit Systems' HeliC³om, Integrated Helmet and Display Sight System (IHADSS) and mission computer. HeliC³om is a fully digital, integrated command, control, communications and mission management system for attack helicopters.*

multimedia information – voice, data and real-time video – over mobile ad-hoc networks (MANET) with dynamic, rapidly-changing network topology. Our military grade router is an ideal solution for small and midsize deployed command posts, as it allows for real-time situational awareness coupled with complete network interoperability across the entire chain of command. TMR Max integrates a powerful data router for IP and non-IP radio networks with a radio-over IP (RoIP) subsystem for advanced voice services to suit multiple profiles and operational needs. Driven by a powerful yet simple to use Network Management System (NMS), the modular and scalable solution can be utilized in any type of tactical configuration. These configurations include numerous command posts and vehicles linked by copper or fiber-optic cables, with shared radio network resources.

- **TIGER™:** Our Tactical Intranet Geographic dissEmination in Real-Time (TIGER) is a market leading tactical communications system built on our in-depth knowledge of actual field conditions, accumulated during years of intensive battlefield experience. Harnessing the entire infrastructure and integrating all communications media – including legacy narrow-band channels – TIGER creates an end-to-end, unified, flexible and continuously learning Intranet. Handling routing, messaging and dissemination, this powerful information grid brings all relevant data to the battlefield instantly, from the command level to the single platform. TIGER also provides optimum message transfer flow and guaranteed message delivery for swift and accurate tactical decisions. Modular and scalable, TIGER's architecture allows both standard (using IP) and tactical applications (using API) to co-exist over the same infrastructure, significantly reducing development time and cost. Media interfaces, layers or components can be upgraded or replaced according to customer need without affecting the overall system. In addition, TIGER can be easily integrated with the customers' existing equipment and adapted to their unique security requirements.

- **IRCS:** The Integrated Radio Communications System (IRCS) is an advanced communications system that enables direct communications between all levels of HLS command – from high-ranking supervisors down to individual units in the field. The scalability and high availability of the IRCS have proven the system as a reliable suite of voice, video and data services for HLS applications. The IRCS facilitates direct communications amongst a broad range of radios and communications devices including first responder and commercial radios, VHF, HF and multi-channel radios, LAN, WAN, PABX, satellite and cellular networks. The system accommodates a diverse range of call types – from simple person-to-person VoIP calls, to video chats, and full-scale multi-participant, multi-network, multi-hop conference calls. The versatile IRCS is ideal for use in multi-agency HLS operations.

- **Air Defense Solution:** Our comprehensive Air Defense Solution creates synergies between a range of aerial and ground arrays to strengthen air forces' C², air defense and intelligence. The solution incorporates Air Command and Control Operation Centers, comprehensive IT and security suites, C⁴ISR suites for airborne and ground platforms, integration with communications media and sensors, as well as other external systems. The C⁴ISR solution improves the national level airspace sovereignty, by enabling early-warning and battle management capabilities, mission planning and engagement, interception control, continued monitoring and operational support.

Elbit Systems was selected by the Israel Ministry of Defense to head the Digital Army Program (DAP) – a master program that computerizes all operations in the land forces. As part of the DAP, Elbit Systems developed ***DOMINATOR™*** *– an Integrated Infantry Combat System that equips warfighters with advanced, miniaturized tools, enhancing situational awareness and enabling them to send, receive, view and transmit data in real-time.*

- **Airborne C^2 Solution:** Our Airborne C^2 solution is designed with an advanced graphical user interface (GUI) and digital map features to provide the crew with data communications and an accurate, real-time tactical picture. The modular system can be expanded as needs evolve, from a single helicopter to a formation, and even to an entire air force. Installed in a wide variety of platforms, the solution was developed by active pilots whose combat experience is incorporated into all facets of the system. Intuitive to operate, the solution features a GUI with mission editing, touchscreen control and single-hand mouse/HOCAS operation. It utilizes a digital moving map tactical situation display and an advanced data link that operates on up to four independent nets. The Airborne C^2 Solution uses onboard radios for data communications with voice override. The system calculates mission times, fuel, distances and bearings, as well as LOS, LOS vs height, obstacles and threats. It also calculates available performance according to altitude, temperature and available power. The C^2 station is based on a ruggedized laptop.
- **UGS:** Our suite of Unattended Ground Sensors (UGS) detect, track and identify human and vehicular enemy targets – enabling total control and terrain dominance. With a high probability-of-detection (PD) and low false alarm rates (FAR), the UGS easily integrate with existing sensors and are compatible to any C^4I system. Our line includes the rapidly-deployed seismic, acoustic, Miniature Tactical Radar thermal miniature imaging detector, providing day and thermal video and images – all connected with dedicated communications and a command and control system.
- **DOMINATOR™:** The DOMINATOR solutions are integrated infantry combat systems that enable full situational awareness across all military echelons. DOMINATOR's elements are all developed in-house and include advanced C^2 applications, personal network radios (PNR-1000), tactical computers, tracking devices, planning displays and connectivity to sensors. The components can be tailored to the needs of all soldier types such as commanders, team leaders, forward observers, snipers, special weapons operators and riflemen. The solution is based on an open architecture baseline and uses standard interfaces that enable seamless upgrades in the future. Using an optimal ergonomic and bio-mechanical design, combined with an advanced mechanism for ideal weight distribution, stabilization and tight fit, DOMINATOR features advanced load carriage and protection – enhancing maneuverability and combat effectiveness on the battlefield.

2015 HIGHLIGHT

- ***Elbit Systems Awarded Contracts to Supply Command and Control, and Communications Systems to the Israeli Ministry of Defense***

COMMUNICATIONS SYSTEMS

Leveraging innovative technology and decades of experience, Elbit Systems provides comprehensive battle-proven communications solutions to all branches of the fighting force.

MCTR-7200 Double Channel 50W/50W
Multiband tactical Software – Defined IP RADIO, NBWF & WBWF, high data rate communications in an ad-hoc network.

COMPREHENSIVE BATTLE-PROVEN Communications Solutions

Based on decades of communications experience, including the legacy Tadiran Communications radio products line, we have extensive operationally-proven expertise in voice, video and data transmission and reception technologies. Our know-how in combining HF/VHF/UHF radio networks with telephony, satellite and IP LAN/WAN networks has resulted in the implementation of integrated military communications infrastructures for triple-play (voice, data and video) applications.

Our experience and expertise is applied to an advanced radio design that features frequencies ranging from 1.5 MHz to 5 GHz with high-grade, built-in cryptographic algorithms and electronic countermeasure techniques (e.g., frequency hopping and direct sequencing).

These systems provide reliable communications in harsh battle environments; quality modems to meet the increasing demand for C^4I data communications; multichannel line-of-sight, frequency-hopping, wideband radio equipment for reliable inter-command post communications and communications controllers; tactical Internet-based integrated communications systems; and C^2 systems for seamless communications from HQ to any point in the battle-space.

Our comprehensive portfolio of leading-edge communications equipment and systems integrate seamlessly with our C^4I and Land systems. As such, we are uniquely positioned to offer our customers a complete net-centric solution for soldier modernization, combat vehicle upgrades, artillery and air defense.

Our communications solutions include:

- **E-LynX™:** Our family of mobile tactical communications solutions based on the most advanced software-defined radio (SDR) technology, supports broadband data communications across maneuvering tactical joint battle groups. These SDRs offer secure and reliable tactical communications to all echelons – from the individual soldier on the battlefield all the way up to headquarters. Comprised of the latest generation multi-band channel waveform tactical IP radios, the E-LynX family provides advanced mobile ad-hoc network (MANET) capabilities to a variety of platforms over any terrain type. Strong error correction algorithms eliminate the possibility of lost data packets, and a self-healing, self-forming ad-hoc networking capability enables robust data communications of several megabits per second at adaptable bandwidths.

MCTR-7200: Part of the E-LynX family of tactical SDRs, the MCTR-7200 features a uniquely designed software communications architecture, an intuitive user interface and multiple configuration options, including vehicular, handheld and dual configurations. The multi-use, single platform contains powerful programmable hardware that offers reliable triple-play voice, video and data services, simultaneously over a single narrowband tactical 25Hz channel. It also offers high-speed data over wideband channels, providing a significant operational edge on the battlefield. Equipped with advanced IP networking capabilities, the MCTR-7200 can build a full mobile tactical network in all terrain types and scenarios.

The MCTR-7200 supports continuous frequency coverage from 30 to 512 MHz. In addition, it offers a modular range of configurations geared to match the specific operational requirements of any mission, including handheld, manpack, vehicle-mounted and marine radio sets.

Advanced multimedia integrated capabilities render the MCTR-7200 a key factor in maintaining constant situational awareness via real-time intelligence such as maps, video and targeting information.

***PNR-1000** is the latest in a line of innovative personal network radios (PNR) providing combat-proven voice, data and video communications solutions to the dismounted soldier.*

***CNR-9000HDR** – Combat IP radio, advanced multi-mode VHF/FM COMSEC/ECCM radio system for superior voice and high-speed data communications.*

- **MCTR-7200 Data Radio (MIPR):** Part of the E-LynX™ family, the MCTR-7200 data radio (MIPR) provides ultra-high data rates of up to 5.5 Mbps for the transmission of high-resolution voice, video and embedded Blue Force Tracking (BFT) over a truly decentralized MANET. With frequency coverage from 225 to 512 MHz, the MIPR offers a modular range of configurations geared to match the specific operational requirements of any mission, including vehicle configurations, as well as both airborne and marine radio sets.
- **PNR-1000:** Part of the E-LynX™ family, the software-defined PNR-1000 IP radio is the ultimate solution for armed forces who wish to provide their dismounted soldiers with advanced communications technology. With its 64 member ad-hoc networking, the radio features automatic voice and data relay, which significantly enhances the soldier's situational awareness and operational effectiveness. As the newest generation of personal network radios (PNR) operating at the full RF spectrum of 225-512 MHz, the PNR-1000 is the lightest of its kind in the market. The PNR-1000 possesses a comprehensive set of features rarely found in similar radios that provide combat-proven voice, data and video communications solutions.
- **HF-8000:** Featuring superior HF operations, the SDR IP HF-8000 radio systems deliver uninterrupted data and voice communications on the battlefield. The radios comply with HF standards and are available in lightweight manpack, vehicular, ship, fixed station and high-power configurations. With its wideband version, the HF-8000 supports 120 Kbps of data and video transmissions. These systems are equipped with patented exclusive antenna solutions that ensure highly reliable and secure voice and high-speed data HF between 0-600 Km with 125 W radios.
- **GRX-8000:** GRX-8000 is the latest generation NATO Band IV with a dual-mode, high-capacity (HC) and frequency-hopping (FH) line-of-sight broadband radio relay system. Designed to meet present and future tactical communications requirements, the battle-proven radio relay system supports the latest IP and legacy communications protocols. With jamming resistant ECCM, the software-defined GRX-8000 enables interference-free communications across the battlefield.
- **HF-6000:** As a combat-proven, multi-adaptive HF radio system for reliable long-range communications, the HF-6000 delivers highly-advanced HF operations to the modern battlefield. The HF-6000 offers advanced COMSEC/ECCM functions to ensure reliable HF voice and data operations.
- **GRX-4000:** An ultra-high capacity, dual-band IP and multi-interface radio relay system for tactical communications. The GRX-4000 simultaneous dual-band and dual-mode operation. The SDR relay system supports the latest IP and legacy communications protocols. Battle-proven as a high-capacity line-of-sight means of communications, the GRX-4000 offers high-quality, interference-free communications from the palm of the hand.

***Tadiran SDR-7200HH** is a handheld software-defined radio offering superior operational versatility for the dismounted soldier.*

GRX-8000

- **SOTM Antennas:** Our advanced broadband satellite on-the-move (SOTM) antennas are ideal for wheeled ground vehicles that require two-way transmission of real-time mission critical information. The ELSAT-2100 is a low-profile tri-band highly ruggedized military SOTM antenna that delivers high performance in Ka, Ku and X bands. The ELSAT-2100 supports high downlink rates of over 10 Mbps and uplink rates of over 5 Mbps, and is ideal for mobile and maneuvering ground military forces. The ELSAT-2000E is a highly ruggedized, field-proven military SOTM antenna especially suited for land platforms. The cost-efficient, low-profile antenna delivers high performance in Ku band. Both antennas are based on our field-proven next-generation passive waveguide planar array panel antenna technology. Offering best-in-class KU band RF performance for every given size, the antennas are designed to be fully integrated with all types of broadband satellite communications platforms, delivering continuously connected voice, video and data communications while the platform is in motion.
- **CNR-9000HDR:** As the most advanced, combat-proven VHF/FM COMSEC/ECCM radio in its class, the CNR-9000HDR offers high-speed data in addition to reliable voice communications. Its advanced capabilities include an extended communications range and powerful error correction codes along with automatic data rate and type adaptation. High-speed data transmission enables real-time video streaming, as well as tactical e-mail and file transfer.
- **CNR-710MB:** The CNR-710MB is an advanced multi-band (30 MHz to 512 MHz), frequency-hopping handheld radio – covering VHF and UHF tactical bands – to facilitate communications between ground, airborne and naval forces. It is well-suited for special forces, enabling ground-to-ground and ground-to-air communications directly from the palm of the hand.
- **VIC-500IP:** The VIC-500IP is our 3rd generation IP digital intercommunications system for armored vehicles. The system equips armored platforms with enhanced inter-crew communications to increase situational awareness and battlefield effectiveness. Fully interoperable with tactical radios (HF/VHF/UHF) and IP-based products, the VIC-500IP offers high levels of reliability and advanced functionality, and effectively handles the most demanding customer requirements and operational scenarios.
- **HU-500:** Specifically designed for use by armored vehicle personnel, the HU-500 helmet offers crew members an unparalleled combination of active noise reduction (ANR) and superior protection. Leveraging our field-proven expertise in platform modernization and communications systems, these tactical helmets enable effective radio and verbal communications between crew members for improved operational efficiency.

***ELSAT 2100** broadband low-profile SatCom on-the-move*

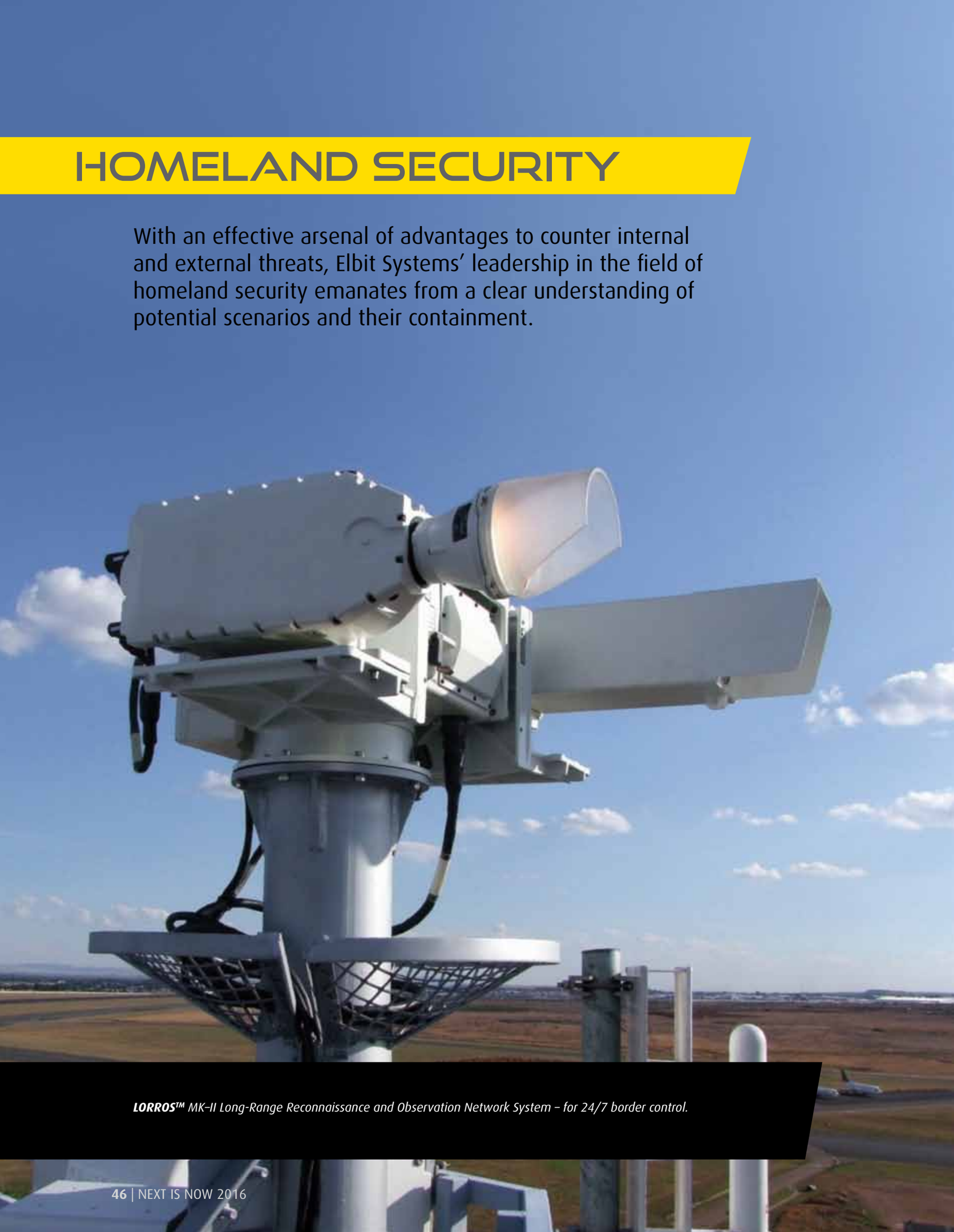
- **SatCom:** Elbit Systems' SatCom solutions feature on-the-move and on-the-pause terminals for military, government and HLS markets. The mature, battlefield-proven systems support a range of frequency bands in operation worldwide, including the MSR-1000 FlyAway terminals for deployed command personnel; the MSR-2000 line of low-profile on-the-move (OTM) systems supporting ground vehicles, maritime vessels and airborne platforms by providing broadband communications for the maneuvering units; and the MSR-3000 lightweight WGS-certified triple band (X, Ku and Ka) manpack terminals for the dismounted soldier.
- **Tadiran HF-6000:** A high-quality, modern HF radio family, the Tadiran HF-6000 provides fullband frequency hopping for reliable and secure communications with built-in Automatic Link Establishment (ALE) and secure voice and data.

2015 HIGHLIGHT

- ***Elbit Systems Awarded a Contract for the Supply of Military Communications Systems to a European Country***

HOMELAND SECURITY

With an effective arsenal of advantages to counter internal and external threats, Elbit Systems' leadership in the field of homeland security emanates from a clear understanding of potential scenarios and their containment.



***LORROS™** MK-II Long-Range Reconnaissance and Observation Network System – for 24/7 border control.*

ADVANTAGES
to counter internal and external
THREATS

International terrorism, illegal cross-border immigration, drug trafficking and inner city crime have increased the need for secure borders as well as robust urban monitoring, surveillance and control systems. In addition, the impacts of natural disasters are growing in magnitude. Local and national law enforcement agencies and first responders require expert solutions for national and public security, as well as for advanced emergency response command, control, communications, computers and intelligence (C^4I) systems.

Our market-leading solutions meet the challenges of a range of homeland security (HLS) issues facing both local and national HLS command and control centers. We offer a multi-dimensional approach to securing the public with enhanced situational monitoring, awareness and analysis, as well as high-level management of the entire security process.

A Holistic, Modular Concept

The complexities inherent in securing modern day cities are multi-faceted. The situation is even more challenging in the aftermath of a disaster, or when the city is host to mega sporting or cultural events. We provide a one-stop-shop for the full scope of our customers' HLS needs. All of our major subsystems and solutions are designed and developed in-house. Our extensive knowledge has been acquired through years of research and the delivery of quality end-to-end solutions for a wide range of defense and para-government customers. In addition, we have a globally recognized reputation as a Lead Systems Integrator (LSI) for complex and multi-disciplinary projects involving a range of elements and interfaces to external systems and databases.

Advanced Border Protection

Our advanced border protection solutions facilitate continuous and superior coverage of terrestrial borders, air-space and jurisdictional waters. The solutions incorporate a cutting-edge C^4ISR system that creates synergies between sensor arrays, ground and mobile forces, aerial assets and Big Data analytics. As a force multiplier, our cutting-edge decision - support tools and technologies deliver the operational intelligence to counter cross border threats in real-time. Our fully operational and field-proven solutions were developed with the expertise gained by protecting some of the most complex cross-border threats around the world.

Our HLS solutions feature a future-proof, modular and open architecture that enhances the user's ability to prepare, identify, manage and prevent incidents, as well as to react appropriately both in day-to-day activities and in times of crisis. Our approach uses recognized standards and protocols to ensure a highly flexible data structure and configurable security processes that enable the complete customization of security solutions. Our flexible technology-based building blocks can either be utilized as an end-to-end solution, or integrated with a customer's legacy system or other third-party components. By providing an integrated solution which incorporates unique capabilities and technologies, such as smart computer-aided dispatch (CAD), unattended ground sensors (UGS) and advanced electro-optics, we offer a cost-effective and low-maintenance approach that provides a tailored, practical and effective solution for each customer.

Integrated Surveillance System.

Border anti-intrusion electronic fence with remote alert and response capabilities.

Command and Control Public Security Solutions

Our HLS solutions are based on a strong legacy of cutting-edge C^{4}I systems. Designed for complex and dynamic situations, they are fully operational and used by governments, public and civil authorities, and defense forces world-wide. As such, they cover all levels of command and control centers: strategic (national HQ), operational (local) and tactical (mobile) operations.

Our HLS Public Security portfolio is comprised of four primary solutions:

Crisis Management – Designed to support decision-makers and emergency operation centers, the solution offers tools and applications for CAD, emergency situational awareness, preparedness management, and emergency resources.

Law Enforcement and First Responders – From the call center to the security of mega events, the solution supports the entire law enforcement process. Using advanced incident management, smart CAD, and analysis tools, the system facilitates police investigation, intelligence and case management.

Safe City – For efficient management of routine and critical situations, Safe City continuously maintains city control and civil safety. With its comprehensive security approach, the solution supports situational awareness and understanding through a common operational picture (COP) shared by central headquarters, rescue forces and command posts.

Special Events – The C^2 solution incorporates tools to design, prepare, simulate and manage public events of any scale. The system's flexibility enables seamless integration with auxiliary forces and personnel, and can easily accommodate large numbers of additional sensors. Integration with Elbit Systems' Training Simulator further enhances the preparedness of the forces and agencies involved in the management of public events.

Border Protection Solutions

Our Advanced Broadband Services for First Responders solution is an advanced interoperable communications solution for mobile first responders, federal safety agencies, as well as state and local public safety authorities. It enables any-to-any secure, interoperable, multimedia services with seamless connectivity between various commercial broadband cellular networks. It includes a Land Mobile Radio (LMR) while maintaining the existing Long Term Evolution (LTE) infrastructure.

Critical Infrastructure Security

Based on our cutting-edge technology and operationally-proven equipment and systems, we design, produce and maintain Critical Infrastructure Security (CIS) solutions, which are specifically tailored to meet customer needs and requirements. Our CIS solutions are fully operational and used by public and civil authorities, governments and defense forces worldwide.

Mobile Command and Control Shelter.

Our CIS solutions establish a perimeter security infrastructure, including smart-fences, hydraulic gates, barriers and a variety of sensor and monitoring assets. Each of these elements is integrated and controlled by a dedicated security management C^2 system, providing the critical facility with continuous monitoring, processing and control capabilities.

It enables any-to-any secure, interoperable, multimedia services with seamless connectivity between various commercial broadband cellular networks. It includes a Land Mobile Radio (LMR) while maintaining the existing Long Term Evolution (LTE) infrastructure.

Mobile Command and Control Shelters

Our portfolio of command and control shelters include various configurations of portable, highly-advanced C^4I facilities that can be quickly erected and then immediately function as on-site command headquarters. Among our facilities is an expandable mobile shelter, which is designed to accommodate larger command teams. With integrated hardware, software and communications, the facility offers full connectivity to all operational command units, bringing effective coordination to the heart of the crisis.

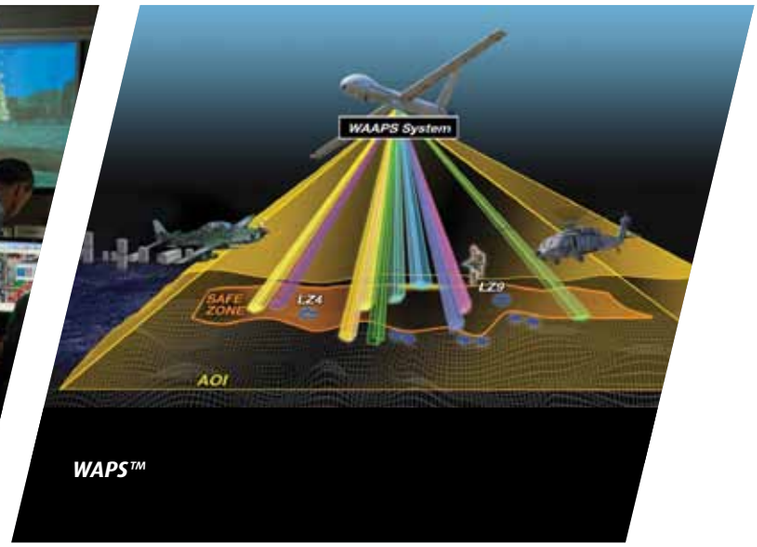
WideBridge™

As a mission-critical secure broadband service for First Responders, WideBridge™ leverages the use of cellular LTE networks to ensure public safety. The solution utilizes secure multimedia services including Push-to-Talk (PTT), Push-to-View (PTV), voice and video conferencing, video streaming from agents and video sensors in the network, map-activated multimedia services, situational awareness information dissemination (command & control), P25 interoperability, centralized remote user device management (MDM) and a revolutionary off-network "Direct Mode" broadband connectivity.

Wide Area Persistent Surveillance

This wide area airborne persistent video surveillance system, continuously monitors, records and analyzes large area footprints, intercepts events and maintains multiple regions of interest (ROI) under constant surveillance with high spatial resolution. Multiple, simultaneous and independent users on the ground can access both real-time and back-in-time (stored) video events retrieved from the airborne platform. Comprehensive video processing and analytics capabilities such as Video Motion Detection (VMD) and Virtual Perimeter (safe zones) with alert mechanisms are fully supported by the system. For panoramic ground surveillance our GroundEye™ can be installed on high masts, towers or as a mobile configuration, providing operators with information and tools that were previously unavailable or difficult to obtain.

Incident Command Team Training System (HLS-ICTTS)



WAPS™

Special Operations Police C⁴I Solution

The Special Operations Police C⁴I Solution is an integrated law enforcement system that enables full situational awareness across all police echelons. The solution's elements are all developed in-house and include advanced C² applications, personal network radios, tactical computers, tracking devices, planning displays and connectivity to sensors. The components can be tailored to the needs of individual law enforcement units. Our solution is based on an open architecture baseline and utilizes standard interfaces that allow seamless upgrades in the future.

Unattended Ground Sensors (UGS)

TREASURES™ Tactical Reconnaissance and Surveillance Enhanced System is a comprehensive system of UGS that enables detection, tracking and identification of human and vehicular targets. Using advanced algorithms and unique communications protocols, the system offers a high probability of detection (PD) and low false alarm rates. Our other UGS for border control and perimeter protection include Small All-Terrain Networked Detectors (SAND), which is designed for real-time target tracking using an array of seismic UGS, and TALOS™ Unattended Ground Radar, which is designed for continuous operation using solar energy. Our UGS systems easily integrate with existing UGS and are compatible with a range of C⁴I systems. Our experience with sensor integration ranges from tactical hand-held sensors such as designators and illuminators, to operational and strategic sensors such as EO, Radar, COMINT, EW, SIGINT and UAS. All relevant sensor data is processed and correlated to produce a coherent, up-to-date common tactical picture.

Electro-Optic Sensors

Our HLS solutions include a high-end field-proven family of electro-optic systems. Our extensive electro-optics portfolio enhances surveillance capabilities and meets a wide range of requirements.

MID – Miniature Imaging Detector

MTR – Miniature Tactical Radar

OCEAN – Seismic Acoustic Multi-Detector

***FOXTRACK™** – a portable Ground Surveillance Radar System that is a lightweight, compact, man-portable radar carried by two operators, soldiers, special operations forces or security personnel.*

Ground Radars

We provide an array of specialized Ground Surveillance Radar (GSR) systems that can be integrated with ISR ground solutions. Foxtrack™ is a lightweight, compact, man-portable radar that can be installed on a vehicle mast, or as a tripod-mounted configuration. Our FPR-10 Radar provides long-range, accurate, high-resolution detection of vehicles and personnel behind foliage. For an unattended configuration, our TALOS and MTR Radar solutions can be utilized.

Training and Simulation

Our simulation and training solutions realistically simulate complex emergency scenarios where multiple security and rescue teams must seamlessly coordinate their life-saving operations. These solutions provide comprehensive training for command, control, communications, crisis management and coordination, both in virtual arenas and in live training environments. The systems simulate a variety of interactive HLS events including terrorism, accidents, natural disasters, dispersion of hazardous materials, attacks on strategic infrastructure and security for large-scale sporting and other events. Our simulation capability is seamlessly integrated into our comprehensive HLS solutions.

Family of Intelligence and EW Systems for Cellular Communications

Whether used standalone or as part of our Wise Intelligence Technology (WiT™) Comprehensive Intelligence System, this family of advanced intelligence and EW solutions delivers a variety of cutting-edge capabilities, including: effective scanning of areas of interest; monitoring, locating and identifying potential threats; mapping targets and creating a complete situational picture; interception of target devices; and selective jamming and manipulation of cellular communications. Designed for military special forces, law enforcement and intelligence units, these sophisticated systems support a range of tactical operations. These operations include locating and disrupting terrorist activities, detecting and dismantling illegal drug activities, assisting in hostage situations, neutralizing IEDs, enhancing search and rescue missions, and controlling access for strategic facilities such as embassies and prisons.

SPID – Spark Passive IR Detection

SPID is a passive, IR-based (infrared), electro-optical threat detection system for the protection of national borders, high-value infrastructure, forward operating bases and rapid deployment forces. Incorporating the latest IR technologies, SPID enables ultra-fast, high-precision, day and night detection of anti-tank guided missiles and mortar launches.

WIT™

As a comprehensive end-to-end tool for intelligence organizations, our Wise Intelligence Technology (WiT) solution addresses every stage of the intelligence process, from planning and direction, to collection, processing, analysis and evaluation, and ending with dissemination and re-evaluation. WiT utilizes market leading technologies and is one of the few solutions to be field-proven, fully operational, and customizable for intelligence organizations.

Cyber Trainer *Live Training for Cyber-Security Professionals.*

Cyber

Leveraging extensive experience with national level defense solutions worldwide, our CyberShield NCDS (National Cyber Defense Suite) provides governments and security organizations with a comprehensive cyber defense system. The NCDS provides classification and mapping of critical national assets, organizations and networks as well as an operations center for real-time monitoring and management of national cyber events. Additional components of the suite include intelligence gathering, event analysis, vulnerability alerts, threat analysis, enforcement, training, simulation and technology-based hardening.

Unmanned Ground Vehicles (UGV)

Our UGVs fulfill a wide range of HLS roles including anti-terror warfare, rescue efforts and reconnaissance missions. Included in our suite of field-proven UGVs are: the Guardium UGV Mark I, a semi-autonomous unmanned ground system that revolutionizes the effectiveness and utility of perimeter security; the Guardium UGV Mark II, with enhanced combat capabilities; the fully-autonomous Guardium Unmanned Ground Combat Vehicle (UGCV) Mark III for complex missions; and the AvantGuard™ UGCV for added ground maneuverability in harsh terrain. In addition, VIPeR™ – the Versatile, Intelligent, Portable elbit Robot – is a family of robots capable of supporting a wide range of missions.

***Hermes™ 450** – multi-role, high-performance tactical UAS.*

Unmanned Aircraft Systems (UAS)

Our internationally-recognized UAS meet many of the complex challenges previously performed solely by manned aircraft. Utilizing in-house components and sub-systems, we are a leading source of turnkey unmanned solutions, high-performance air vehicles, advanced ground control stations, sophisticated payloads and trainers, as well as maintenance and support for all tactical and operative echelons.

The Hermes™ family of UAS provides expeditionary, long-endurance and cost-effective solutions for close and long-range tactical missions. The latest generation Hermes 900 Medium Altitude Long Endurance (MALE) UAS is effective within a broad range of air force, navy, army, and para-government applications. The covert Skylark™ man-portable and close-range tactical UAS is electrically propelled with a very low logistical footprint.

***MICOM** – Long-Range Communications Systems.*

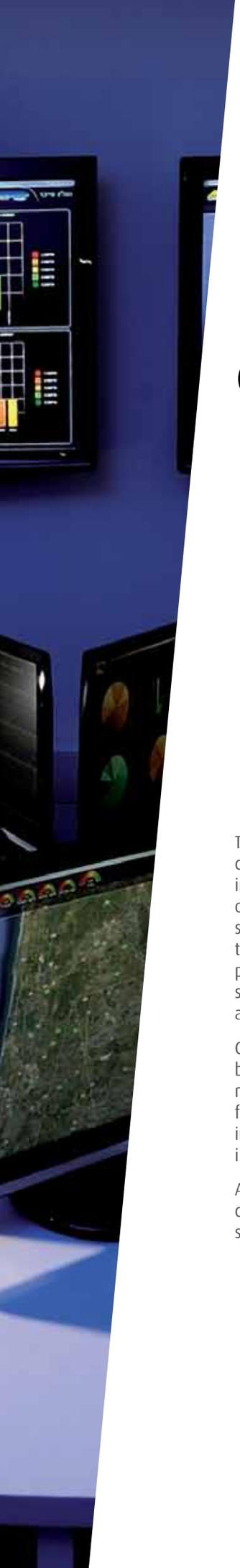
2015 HIGHLIGHTS

- *Elbit Systems awarded contracts to supply integrated systems for Homeland Security applications*
- *Elbit Systems' Innovative System to Monitor Israel's Mekorot Pipeline to Prevent Sabotage and Water Theft*

CYBER

Elbit Systems delivers comprehensive cyber defense solutions designed to protect government, military and critical civilian infrastructures

CyberShield *Command Core – Managing the cyber battlefield and the proactive cyber defense array – to ensure confidentiality, availability and integrity of critical cyber assets.*



CYBER DEFENSE SOLUTIONS

for government, military and critical civilian infrastructures

The growing dependency on information technology and communications networks has rendered critical national infrastructure vulnerable to cyber-attacks. These assaults originate from a broad range of attackers such as hostile state intelligence and military organizations, hackers and terrorists groups. Cyber-assaults are capable of disabling power grids, telecommunications networks, water supplies, financial systems, databases, flight controls and other critical infrastructure and technologies.

Cyber-warfare, cyber-espionage and cyber-crime have been employed to infiltrate and damage sensitive national defense systems, withhold essential services from millions of citizens, disrupt or seize crucial databases, interrupt internet services, gather strategic and classified information and sabotage advanced weapon systems.

A comprehensive, best-in-class cyber-defense solution is critical in order to combat the serious threat to national security posed by cyber-attacks.

Leveraging our vast experience with national level defense and security solutions worldwide, we have developed and delivered advanced cyber-solutions and technologies that enable our customers to prevail in the virtual battlefield.

Our proactive cyber-defense approach, supported by our innovative technology, provides organizations with unprecedented cyber-defense capabilities.

Our systems can be implemented as a comprehensive turnkey solution or as modular components that can be tailored to the customer's doctrine and customized to their cyber-defense requirements. All of our cyber-defense solutions are backed by our unique methodology and expertise in national-grade security projects developed over the last four decades.

***Cyber Training** – Live Training for Cyber Security Professionals.*

CyberShield NCDS™ Turnkey National Cyber-Defense Solution

Our National Cyber Defense Suite provides an end-to-end cyber-defense solution to aid cyber-security professionals and decision makers in securing national, military and civilian networks against all forms of cyber-attacks and cyber-threats. CyberShield NCDS consists of integrated cyber-security hardware and software platforms. These sophisticated platforms incorporate real-time monitoring of the cyber-domain, threat and event detection and analysis, management of cyber-events and creation of cyber situational awareness.

Encompassing a cyber-defense operations and control center, CyberShield NCDS also provides platforms for training and simulation, cyber-intelligence gathering, and cyber-research and investigation.

CyberShield Command Core – Management of the Cyber Battlefield

Our CyberShield Command Core provides comprehensive response management and cyber situational awareness, enabling the high-fidelity prevention and protection of computer networks and critical systems from cyber-events and cyber-threats. As an integral part of our CyberShield NCDS solution, CyberShield Command Core technology supports all phases of the proactive cyber-defense approach – collection, detection, enrichment and analysis, management, response, and prevention – providing a comprehensive cyber-defense solution. CyberShield Command Core's modular infrastructure allows for collection and transportation of essential data, long-term scalable storage for analysis and detection purposes, information sharing and data dissemination, detection and analysis algorithms and data mining. With its comprehensive cyber-event management, CyberShield Command Core ensures data and network confidentiality, availability and integrity.

Cyber Trainer – Live Training for Cyber-Security Professionals

A skilled cyber-defense workforce is required in order to combat the serious threat to national security posed by cyber-attacks. Our comprehensive CyberShield NCDS Training System offers a cyber-defense virtual training environment designed to train cyber-security professionals and decision makers. Conducted in a generic, scalable, isolated and secured environment, the CyberShield NCDS Training System offers a hands-on and realistic training experience. Trainees are exposed to simulated attack scenarios and security breaches injected into networks, with real-world traffic simulation, in order to improve their skills. Each session is recorded, and concludes with a full performance evaluation and debriefing.

Locked Wave

Locked Wave is a cyber RF (radio frequency) Intelligence system covering both the physical and cognitive aspects of the electro-magnetic spectrum on land, at sea and in the air. The system operates in active and fully passive modes, providing access, inspection and manipulation of encrypted airwave-transmitted communications – such as Wi-Fi. Designed for military forces as well as homeland security agencies, the system can operate standalone or can be integrated as an add-on with existing Intelligence solutions, as well as with EW solutions as a soft-kill capability. Locked Wave provides high-quality Intelligence in real-time, enables access to encrypted data stored in Wi-Fi communications, allows data storage or attack and decrypts all Wi-Fi standard encryptions including WEP, WPA and WPA2.

2015 HIGHLIGHTS

- *Elbit Systems Signs an Agreement to Acquire NICE Systems' Cyber and Intelligence Division*
- *Elbit Systems' Cyber Subsidiary, CYBERBIT, Awarded Contracts by European and African Customers*
- *Elbit Systems and CYBERBIT Receive Frost & Sullivan Award for Competitive Strategy Innovation and Leadership in the Global Cyber Intelligence and Security Market*

NAVAL SYSTEMS

Bringing the benefits of net-centric interoperability to the entire naval fleet, Elbit Systems empowers naval commanders and crews with secure, reliable and continuous access to the information they need to interact with air and land forces.

Seagull™ – Highly Autonomous Unmanned Surface Vessel (USV) System

MARITIME DOMINANCE & OPERATIONAL INTEROPERABILITY

for the entire naval fleet

Seagull™ – Highly Autonomous Unmanned Surface Vessel (USV) System

Elbit Systems' Seagull is an organic, modular, multi-mission Unmanned Surface Vessel (USV) system. Seagull provides navies with a unique force multiplier to assist in countering the rapidly growing threat environment within the constraints of today's challenging budgeting reality. Designed with a focus on Mine Counter Measures (MCM) and Anti-Submarine Warfare (ASW) capabilities, Seagull delivers cost-effective, stand-off enhancement of naval operations, reducing the risk to human life while cutting operating costs and reducing manpower requirements. The Seagull system is an effective asset for naval missions comprised of two organic 12 meter USVs. The system incorporates switchable/replaceable mission payload suites operated and controlled in concert by one Mission Control System (MCS) from manned ships or from shore.

The modular installation mission payload suites operate with the same vessels, MCS and data links – making the system truly multi-mission. The Seagull's main advantages include:

- **Switchable/replaceable mission modules** including: MCM, ASW, Maritime Security (MS) and Law Enforcement (LE), Force Protection (FP), Electronic Warfare (EW) and more.
- **Easily Deployable and Organic:** deployable by the naval force anytime, anywhere, worldwide.
- **MSC Dual USV Control:** online, in-stride MCM and effective ASW operations leading to higher OPTEMPO
- **High Level of Autonomy:** The suite includes a patented Autonomous Navigation System (ANS) with obstacle avoidance, in full compliance with COLREGS (International Regulations for Preventing Collisions at Sea).
- **Network Ready:** inherent C^4I in USV and MCS for enhanced situation awareness
- **Redundant Systems:** enhanced safety and reliability
- **UAS interoperability:** optional combined UAS-USV operations

Skylark™ 3 – Shipborne light Unmanned Aircraft System (UAS) for patrol boats and small vessels Passive and Active EW Suites

Skylark 3 is a new autonomous mini-Unmanned Aircraft System (UAS). It is best suited for brigades and divisions in "beyond the next hill" reconnaissance, counterinsurgency and force protection missions, as well as for use in a range of civil applications, such as border and coastal security and antiterror operations. The new system has already been selected by a customer. Leveraging the proven technology and operational experience of Elbit Systems' Skylark family of mini-UAS, Skylark 3 offers a wide range of system enhancements, including a significantly larger range (more than 100 km), flight endurance (up to 6 hours) and payload capacity (up to 10 kg). Launched via a pneumatic launcher, mounted either on the ground or on a vehicle, Skylark 3 offers upgrades such as improved payloads with better target detection, classification and surveillance capabilities. These deliver superior Electro Optical/Infrared (EO/IR) video and photographic imaging in both day and night operations and in adverse field conditions. The UAS incorporates an electric motor, which reduces sound signature and enables operating over long distances and at high altitudes.

***Hermes™ 900** – Maritime Patrol Unmanned Aircraft Systems (MPUAS).*

Hermes™ 900 Maritime Patrol Unmanned Airborne Systems (MPUAS)

Elbit Systems' Hermes 900 leverages over three decades of experience in UAS and maritime C4I. Combining a reliable and highly-autonomous UAS, high-performance payloads and maritime C4I capabilities, it covers and monitors large areas in the maritime environment – without any requirement for pilots. For maritime patrol, the Hermes 900 configuration features maritime patrol radar (MPR), AIS, EO/IR and optional ELINT/COMINT. The Hermes 900 operates over both land and sea. The system can incorporate flexible cutting-edge multi-payload configurations employing standard and long-range EO/IR/Laser, SAR/GMTI and MPR, COMINT/DF, COMINT GSM, CoMMJAM, ELINT, EW, hyperspectral systems, large area scanning systems, wide area persistent surveillance and other payloads.

The Hermes 900 features over-the-horizon, persistent multi-mission, multi-payload capabilities with a class-leading payload carrying capacity of 350 kg. With its 15m wingspan and 1,180 kg maximum takeoff weight, the Hermes 900 is a modern and proven multi-role MALE UAS. It is capable of performing missions for maritime patrol, support for anti-surface warfare (ASuW), area dominance, and persistent ISTAR. The Hermes 900 has already been delivered to various customers including the Israel Defense Forces (IDF) and several multiple international customers. The Hermes 900 mission control system incorporates a naval C4I system to support maritime patrol mission planning and execution.

In addition to maritime patrol missions, the Hermes 900 can also perform ground support missions and offers the capability for integrated multi-platform, multi-sensor operation. With its modular payload capability, the Hermes 900 can be rapidly re-configured in the field for versatile missions, offering users enhanced flexibility and cost-effectiveness.

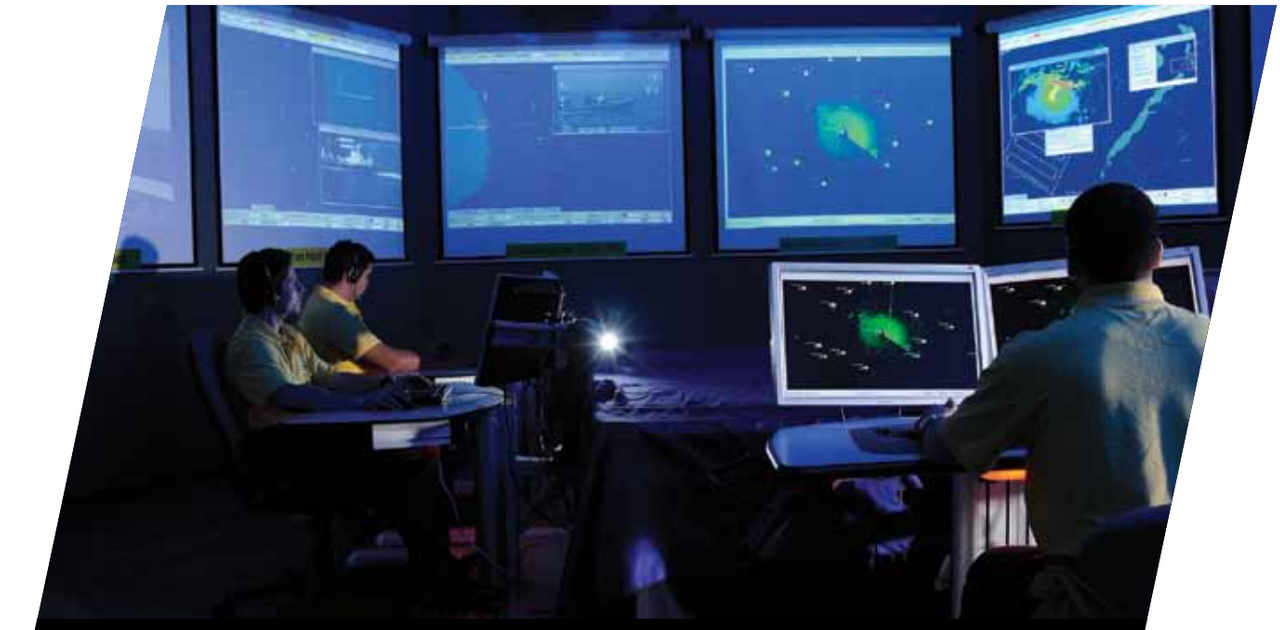
Hermes Ground Control System

Mission management is performed in a highly autonomous manner via the Hermes Ground Control System (GCS), which is designed to control combined Hermes 900 and Hermes 450 missions. The Hermes 900 can perform two concurrent missions from the same GCS using two ground data terminals (GDT).

ENTCS – Naval Combat Management System

From coastal patrol boats to offshore vessels and Corvettes, the ENTCS provides a cost-effective combat management system (CMS) and core for combat system integration and optimization of all ship operations, thus supporting all facets of surface ship-based naval warfare and maritime patrol.

The ENTCS CMS is based on three decades of naval C2 experience, including pioneering C4I for the Israeli Navy. The system incorporates advanced highly-automatic tactical picture-building algorithms and SW to provide naval commanders with a processed, integrated and comprehensive common tactical picture at the ship and force levels.



Coastal ENTCS – *Maritime Surveillance Control Center Central Command & Control for Critical Maritime Surveillance.*

With robust networking capabilities, the ENTCS also provides the key for the integration of naval ships and shore-based naval command centers.

Coastal ENTCS – Maritime Surveillance Control Center
The modern naval arena poses significant challenges to navies, coastguards and other government agencies aiming to protect national interests along the coasts, in territorial waters, and across the country's exclusive economic zone (EEZ). Coastal ENTCS provides users with a centralized local, regional or national facility for compiling, presenting and supervising the maritime situation in the entire area of interest. Coastal ENTCS achieves this by integrating off-shore and shore-based sensors, patrol vessels, MPA, and UAS – utilizing a robust and flexible communications setup.

Coastal ENTCS applies a comprehensive naval C^4I system as the heart of the maritime surveillance control center.

Seaport Security and Critical Infrastructure Protection
Elbit Systems has leveraged decades of experience, expert methodologies and technological superiority in the field of security electro-optics and software to produce the Elbit Systems Critical Infrastructure Protection (CIP) solution. The CIP creates a tailored security net around the seaport to provide security and HLS authorities with complete control over the site. The CIP has been successfully implemented in dozens of various large, complex projects worldwide, including seaport, marine and coastal surveillance (Europe, Asia-Pacific, and Israel); railway stations, tracks, bridges and tunnel security (Israel); airport security (Europe, Africa and Israel); border security (Europe, Asia-Pacific) and more. At the heart of this solution, we developed the ROTUNDUS Command and Control System, designed and developed by ELSEC for the precise mission of securing critical sites. By integrating all subsystems into a single unified situational awareness picture, ROTUNDUS provides operational management with a high-level consolidated view of the site. Other subsystems designed in-house and by various manufacturers include:

- Multi-layered perimeter intruder detection system (PIDS)
- External and perimeter surveillance cameras
- Gate access control system
- Building terminals security and surveillance
- Pedestrian and mobile security forces
- IT security
- Communications and power infrastructure

SupervisIR™ and Long View SW
SupervisIR is a tactical versatile IR persistent wide area ISTAR system for coastal and border applications. SupervisIR

Naval Combat Management Systems *provide C², data links, sensors and control systems for ships. The systems feature automatic picture building, comprehensive tactical support, threat evaluation and weapon allocation algorithms.*

***TIMNEX II** – an advanced ESM/ELINT system for submarines, installed in Dolphin Class submarines.*

***DESEAVER** – Decoy Control and Launching System – responds simultaneously to multiple threats by delivering various payloads at accurate time intervals, according to specified anti-missile doctrines and guidelines.*

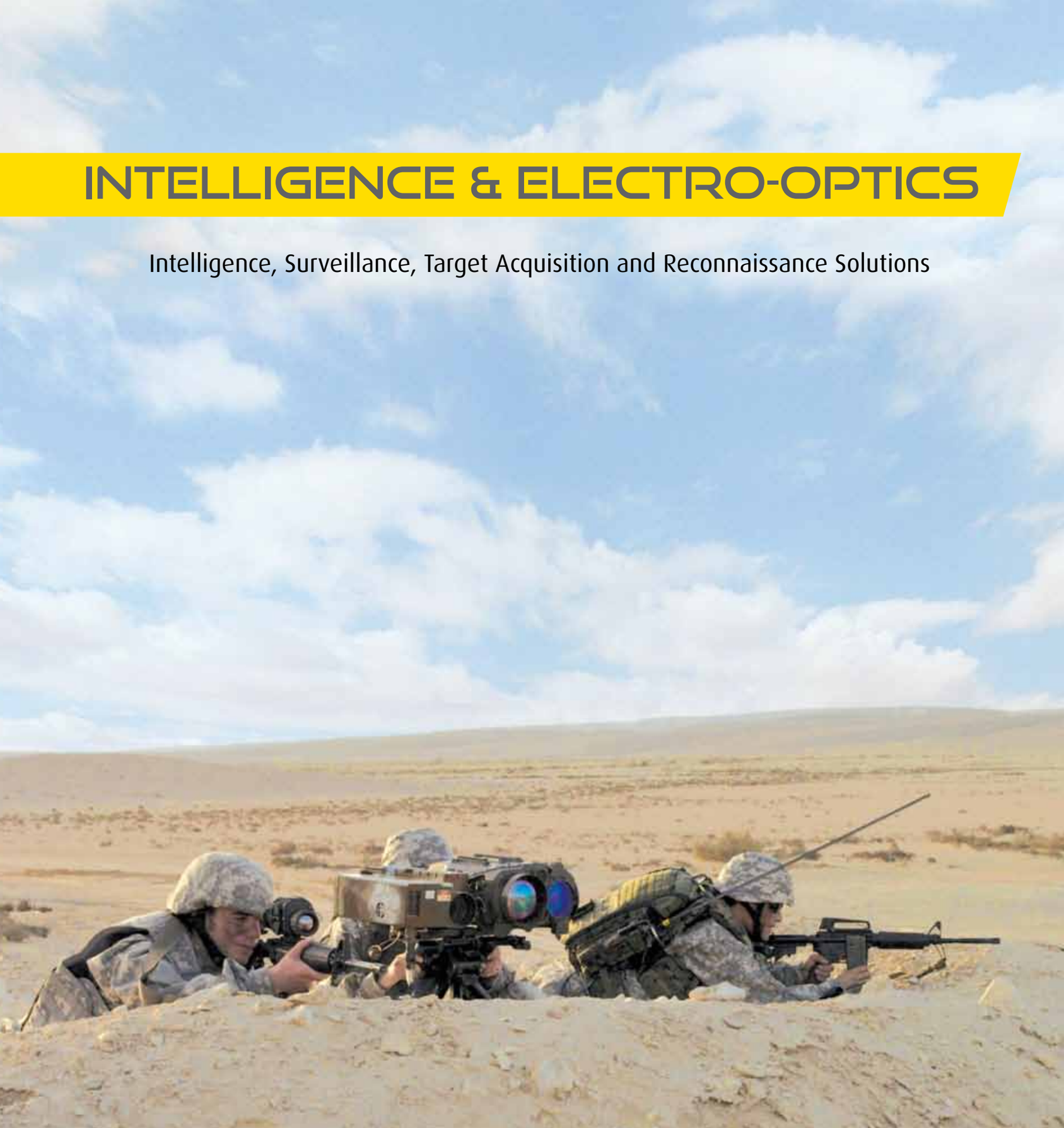
provides real-time IR panoramic situational awareness including simultaneous surveillance and automatic tracking of all maritime activity at the scene. Coupled together with the Long View SW combined day/night sensing shortwave infrared (SWIR) system for high-resolution investigation, the two systems provide a complete solution for coastal surveillance and harbor protection requirements.

SupervisIR, based on a breakthrough patent-pending IR technology, enables the user to visually monitor a large area and gather critical decision-making information.

Long View SW is a versatile long-range observation and target acquisition system integrating a long-range zoom FLIR, CCD and SWIR channels, eyesafe laser rangefinder, GPS and magnetic compass. The system has gained extensive experience in actual field operations, as a main border and coastal surveillance system used by the IDF and other customers worldwide. Elbit Systems has also supplied a mobile version of Long View for mobile coastal surveillance applications. The system is easily integrated with search radars, command and control systems, and with a wide variety of communications networks.

INTELLIGENCE & ELECTRO-OPTICS

Intelligence, Surveillance, Target Acquisition and Reconnaissance Solutions



LONG VIEW CR *is a versatile combined day/night system for long-range observation and target acquisition integrating a long-range zoom FLIR, day channel, eyesafe laser rangefinder, GPS and magnetic compass. Mounted on a goniometer (Mini Atlas), LONG VIEW CR is an outstanding tool for acquiring targets and engaging fire from long ranges.*

THE FUTURE BELONGS TO

those with the vision to see it first

In today's ever-changing world, marked by rapidly evolving new and innovative threats on both the battlefield and the homeland, the name of the game is intelligence. With the vision to anticipate these emerging challenges – and the insight to respond with cutting-edge solutions – Elbit Systems sets the standard for excellence in Intelligence, Surveillance, Target Acquisition and reconnaissance (ISTAR). Our ISTAR solutions synergize Elbit Systems' industry-leading position in the global electro-optic and unmanned systems markets with advanced communications and signal intelligence capabilities – supported by in-house developed command and control.

A World Leader in Electro-Optics

If it's out there, you'll see it

Elbit Systems Electro-optics - Elop (Elop), part of the ISTAR division, is an industry leader in all aspects of electro-optics (EO). Leveraging our extensive defense and security experience worldwide, we provide highly advanced EO solutions for space, airborne, ground and maritime applications that give our customers an advantage facing the evolving challenges on the battlefield and in the homeland.

Our systems range from direct infrared countermeasure (DIRCM) systems for the protection of aircraft to payloads for space, airborne, naval and land-based missions, to head-up displays (HUD) and advanced target acquisition systems (TAS), inertial navigation systems (INS) and measurement units, as well as laser, thermal imaging (TI) systems, HLS solutions, ground integrated sights and I2 night vision systems for intelligence, surveillance and reconnaissance (ISR). This portfolio, combined with our heritage of decades of operational experience enable us to deliver industry-leading solutions for the intelligence community, land warriors, close air support, and all types of land platforms, air defense and security systems.

We are one of only a handful of companies worldwide that consolidate the key skills and facilities in all major areas related to our EO systems, in-house, and under one roof. These capabilities range from research, development, engineering and manufacturing of sub-assemblies and sensors, to production and integration of multidisciplinary systems, complete with highly dedicated and specialized customer support and services.

Multi Spectral Infrared Countermeasure (MUSIC™) – *family of DIRCM systems protects military and commercial aircraft of all sizes from surface-to-air IR missiles.*

mini-MUSIC™ – a compact, lightweight system, optimized for small and medium rotary and fixed wing.

Airborne Electro-Optics and Laser Systems

Space Reconnaissance

We provide advanced EO digital cameras and telescopes for diverse space applications in different wavelengths: panchromatic, dual-band, multi and super-spectral.

Serving as the Israeli Government's Center of Excellence for electro-optics in space applications, our operations feature vertically integrated facilities, advanced technology and a unique space heritage that enables us to serve as an international turnkey systems supplier.

Stabilized Payloads

Optimized for fixed and rotary-wing aircraft, UAS, combat vehicles, naval platforms and ground applications, our lightweight payloads include up to ten sensors, MWIR FLIRs (3rd generation), day channels with zoom, a SWIR channel, spotters, eyesafe rangefinders and diode-pumped laser target designators in a stabilized turret.

Our main products include:

- **LOROP** (Long Range Oblique Photography) for strategic airborne intelligence gathering
- **AMPS II** (Advanced Multi-Sensor Payload System) for strategic airborne intelligence gathering
- **CoMPASS™ family** (15″ Compact Multi-Purpose Advanced Stabilized Systems) for the full range of purposes and platforms
- **Micro CoMPASS™** (8″ Micro Compact Multi-Purpose Advanced Stabilized System)

All of our payloads have autonomous navigation capabilities, provided by the INS/GPS embedded in the camera. The pod also contains a system management and video processing unit, data link and data recorder.

DIRCM – EO Countermeasure Systems

From rotary-wing to fixed-wing, for military and civilian aircraft, the MUSIC™ family provides total DIRCM solutions.

Elbit Systems offers a family of advanced, highly-effective DIRCM (Direct Infra-Red Counter Measure) systems for military and commercial fixed and rotary-wing aircraft. The MUSIC family of DIRCM systems protects military and commercial aircraft of all sizes from surface-to-air IR missiles (MANPADS) and is installed without impacting the platform's performance. C-MUSIC is pod-mounted and specially designed to defend large commercial jet aircraft or tankers, including the B777, B747, B737, B757, B767, B707, A320 and KC-390. The pod integrates all of the elements of the protection system, including the Missile Warning System (MWS). The latest additions to the DIRCM product line are mini-MUSIC, a compact lightweight system, optimized for small and medium rotary and fixed wing aircraft, and J-MUSIC, designed for distributed installation on small to medium-size jets.

Hyperspectral Imaging System (HIS)

Among our main hyperspectral imaging products is Chariots of Fire, a lightweight, low-power consumption measurement and signature intelligence (MASINT) system. It is fully

Long-Range Oblique Photography (LOROP) *– Air IMINT systems provide realtime reconnaissance, electro-optical coverage 24/7 over very wide areas from long standoff and medium to low vertical distances.*

Hyperspectral Imaging System *– Chariots of Fire is a lightweight, low-power consumption, MASINT system, fully autonomous, containing a primary HIS and a secondary bore-sighted high-resolution panchromatic camera, capable of stereoscopic imaging.*

autonomous, containing a primary HIS and a secondary bore-sighted high-resolution panchromatic camera, capable of stereoscopic imaging. Hyperspectral data is useful in a wide variety of applications relating to the classification or identification of properties or objects with high precision and resolution including materials and environmental hazards, geosciences, detection of human presence and other characteristics.

We are a leader in the hyperspectral remote sensing arena, providing turnkey solutions for hyperspectral remote sensing and data exploitation. We develop and operate a full range of VNIR-SWIR, hyperspectral airborne sensors, as well as applications for end-users, both in the commercial and defense markets.

These sensors include proven applications for areas such as environmental mapping (aquatic environments monitoring and pollution control), geology (mineral mapping and environmental impact on mining areas) and agriculture (precision farming, growth monitoring, yield prediction and soil classification).

Head-Up Displays

Over the past four decades we have supplied thousands of head-up displays (HUD) for more than 25 aircraft types: from large fighter cockpits such as the F-16 C/D, F-16I, T-50, MiG-29 and SU-30, to small cockpits such as the T-38, F-5, ALX and Kfir C8. Our military HUDs employ analog CRT or digital LCD as the image source. Our systems for commercial applications include digital HUDs featuring an LCD-based image source and a compact HUD with advanced optics. We strive to meet specific user requirements, offering advanced HUD technology for medium-sized business jets. Our customers range from the U.S. Air Force, the Israeli Air Force and other major air forces worldwide, to aircraft manufacturers such as Lockheed Martin Aerospace, Boeing, Embraer and others.

Inertial Sensors and Navigation Systems

We have extensive experience in developing, manufacturing and installing a large selection of battlefield-proven inertial sensors and navigation systems that provide accurate and reliable navigation and stabilization data for platforms, payloads and mission systems. Our solutions are operative in various airborne, ground and naval applications, providing the position and orientation data required for platform operation and target acquisition. A wide variety of products/systems are available, including:

- Inertial sensors and inertial measurement units (IMU), providing high data rate stabilization as well as navigation data.
- Fully-integrated, high-performance, GPS-embedded inertial navigation systems (INS/GPS), enabling continuous operation even in GPS-denied scenarios.
- Attitude and heading determination systems – inertial or GPS-based.

Elbit Systems is one of the world's largest producers and integrators of integrated gunner and commander sights for armored fighting vehicles and main battle tanks.

SupervisIR™

Land Electro-Optics and Thermal Imaging Systems

LONG VIEW SW (LVSW) – is a versatile combined day/night SWIR system for long-range observation and target acquisition. LVSW integrates a long-range zoom FLIR, CCD and SWIR channels, eyesafe laser rangefinder, GPS and magnetic compass. Mounted on a goniometer (Mini Atlas), LVSW is an outstanding tool for acquiring targets and engaging fire from long ranges.

The SWIR channel enables the receipt of a detailed image in adverse weather conditions such as fog, haze and smoke.

SupervisIR™ – we have pioneered a new technology that enables wide area persistent surveillance in the thermal spectral range. It changes the paradigm of persistent surveillance from reactive to user initiated. The first product of its type, SupervisIR is a tactical, versatile, IR persistent wide area ISTAR system for land applications with cost-effective system architecture.

Based on a breakthrough patent-pending IR technology, SupervisIR enables the user to visually monitor a large area and gather critical decision-making information. SupervisIR enables an end-to-end solution and the ability to take fast decisions.

SupervisIR can be easily integrated with any external system, providing significant operational advantages, and optimizing overall efficiency for any mission.

SupervisIR's benefits include:

- Facilitates 24/7 wide area surveillance using passive IR technology at a refresh rate of less than 1 second.
- Provides real-time automatic target detection and tracking capabilities.
- Allows covert passive operation so it can be installed in populated areas (unlike Radar).
- Cannot be blocked by EW (unlike Radar).
- Works in diverse weather conditions.
- Within the panoramic picture, the operator can select several areas of interest that can be viewed simultaneously.
- Outputs can be controlled and viewed by multiple users.

Image Fusion – we recently introduced real-time digital image fusion of various spectral channels. The various channel images are merged into one image to enable display of the optimal image of the event for the operator.

Android-based Products Android operating system allows the end-user to enjoy a familiar Android user interface and to make adjustments in the product features after purchasing. The Android-based product family is open source and enables the addition of "off-the-shelf" and customized applications. The Android-based products include medium and long-range observation systems and are already being implemented in the Coral CR II and LVSW systems.

CORAL-CR, Rattler, & Atlas – *Lightweight and accurate target acquisition and designation systems, including goniometer with internal gyro compass for accurate north finding.*

The CORAL 3-5µm family *of high-resolution hand-held personal thermal imaging cameras with an integral GPS receiver is lightweight, easy to operate and provides excellent picture quality.*

Integrated Sights for AFVs and MBTs
We are one of the world's largest producers and integrators of integrated gunner and commander sights for armored fighting vehicles (AFV), main battle tanks (MBT) and tactical vehicles. Over the last three decades, we have supplied thousands of systems and sub systems for new AFVs/MBTs and upgrade programs and we are a prime systems supplier for all Merkava tank gunner and commander sights. Our battle-proven solutions feature advanced image processing and rapid, accurate target acquisition. Our modular design combines direct view observation, TV channels, eyesafe laser rangefinders and a wide variety of night TI technologies with line-of-sight (LOS) stabilization.

Target Acquisition and Designation Systems
We have broad experience with a wide range of lightweight, man-portable and accurate target acquisition systems (TAS) for the use of artillery forward observers (FO), forward air controllers (FAC) and intelligence, reconnaissance and special forces.

Among our target acquisition systems are the ATLAS family product line, consisting of the ATLAS LT, MINI ATLAS, MICRO ATLAS, MICRO ATLAS GC and the ATRIS. The ATLAS systems add new dimensions to target acquisition accuracy with their north finding ability.

Thermal Imaging Systems
Our latest generation of cooled and uncooled TI systems produce thermal images of outstanding quality, based on our proprietary image processing circuitry and software algorithms. These systems provide observation and surveillance solutions for air, naval, land, homeland security and stabilized payloads.

Our customers consist of the armed forces of numerous countries worldwide, including the Israel Defense Forces, the U.S. Marine Corps, the Canadian Defense Forces, the German Special Forces and forces from several other NATO countries. All of these organizations have fielded our cutting-edge hand-held lightweight TI cameras for infantry, observers and special operation units to excel at observation, target acquisition and perimeter defense.

The CORAL 3-5µm family of high-resolution hand-held personal thermal imaging cameras with an integral GPS receiver is lightweight, easy-to-operate and provides excellent picture quality.

Micro Coral – a unique, compact, hand-held thermal camera (weighing 1.65 kg) that is operable for 12 hours using a unique lightweight sensor with a shorter cooling time, reduced power consumption and cooler MTTF.

The Ranger product line is a closed-frame line of modules designed for OEM implementations. It is highly suited for integration as part of a multi-sensor suite and/or weapon system. The solution is compact and easy to handle, assemble and dismount under all operational, terrain and weather conditions.

***XACT** – family of soldier E/O, comprised of Micro NVG's and Thermal Weapon Sights.*

The XACT family of infantry E/O products, comprised of night vision goggles (NVG) and thermal weapon sights (TWS), is unique for its small dimensions and excellent performance. It has breakthrough communications capabilities which allow it to be integrated with battle management systems (BMS) and modernization programs.

XACT NV is a micro NVG, monocular or binocular, with incorporated software to enable personalization and maintenance capabilities.

Systems in our thermal product repertoire include:

- Multi-target acquisition systems integrating TI with LRF, GPS and compass
- Hand-held thermal imagers
- Uncooled products – weapon sights and driver viewers
- Medium to very long reconnaissance systems
- Thermal sights for commander and gunner sights
- TWS designed for use by individual infantry soldiers on a wide variety of rifles and machine guns
- XACT TH64 – an extremely lightweight and small night vision monocular family product
- The Coyote family of uncooled thermal weapon sights
- A wide range of reflex and telescopic aiming sights with several modes of indications and reticle patterns in accordance with customer requirements.

***PLDR III** – Portable Lightweight Designator/ Rangefinder for Laser-Guided Munitions.*

***The CORAL 3-5µm family** of high-resolution hand-held personal thermal imaging cameras with an integral GPS receiver is lightweight, easy to operate and provides excellent picture quality.*

Lasers

Precision in targeting threats is achieved by our cutting-edge laser systems, which have been tested and proven in combat for more than three decades. We are at the forefront of laser technology, with thousands of systems supplied and in-service worldwide. Solutions include: airborne, ground and maritime laser designators and rangefinders with eyesafe wavelength, laser radar (LADAR) and light detection and ranging (LIDAR) systems, including helicopter warning systems. Our highly acclaimed battle-proven laser systems have been successfully fielded by the Israel Defense Forces, the U.S. Marine Corps, the U.S. Navy, NATO armed forces and many others. We are a pioneer in diode-pumped laser technology.

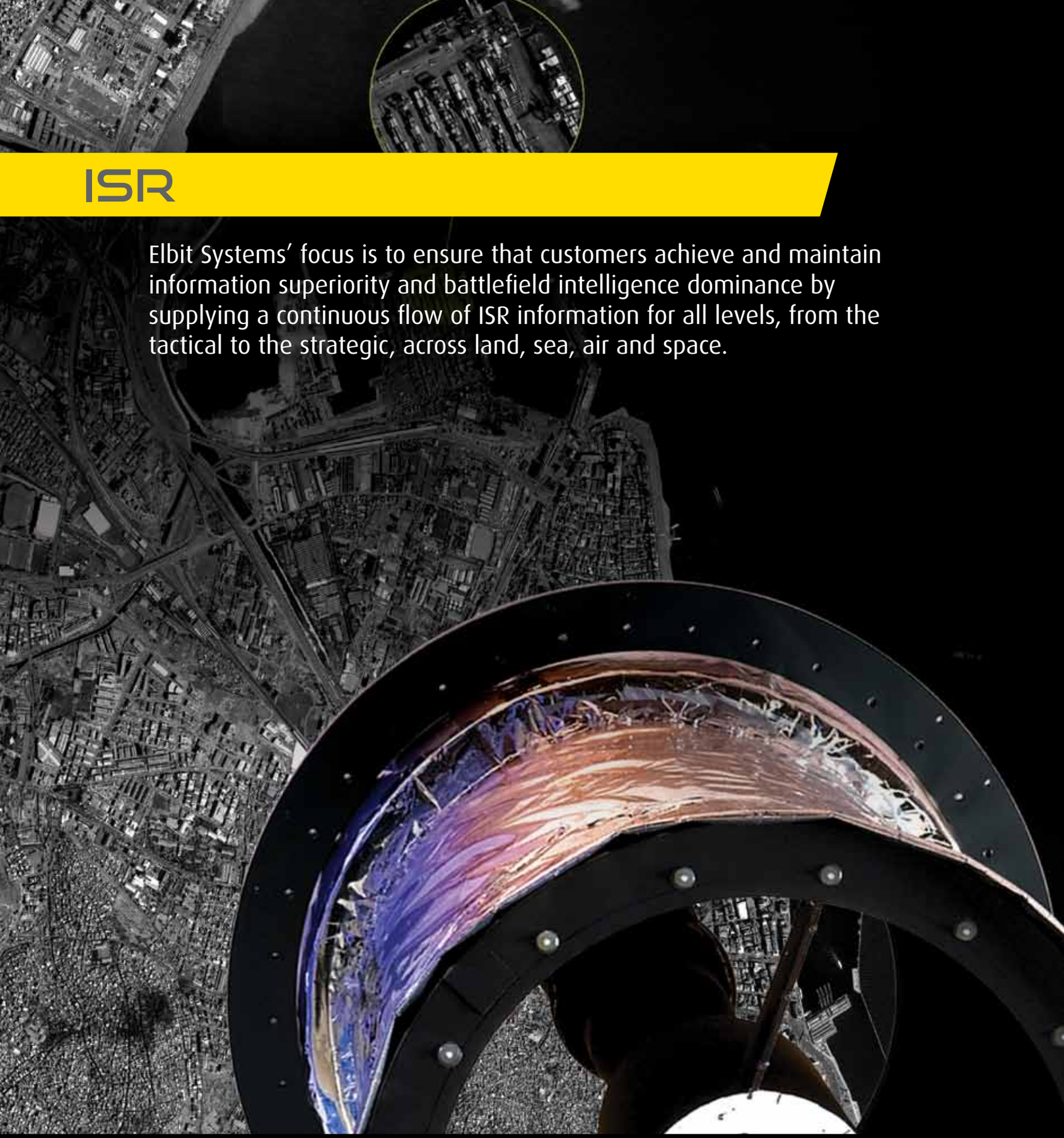
We have supplied thousands of laser designators for airborne, ground and naval applications including lightweight, man portable and hand-held systems, such as the Portable Lightweight Designator/Rangefinder (PLDR) and Rattler G systems, which enable infantry to fire rapidly and accurately on hostile targets. Our laser rangefinders are employed in stabilized payloads, tanks, fire control systems, anti-aircraft systems, and tripod-mounted, rifle-mounted and anti-tank launchers. Among our innovations in LADAR is SWORD, a laser radar-based obstacle warning system for helicopters that significantly increases flight safety.

2015 HIGHLIGHTS

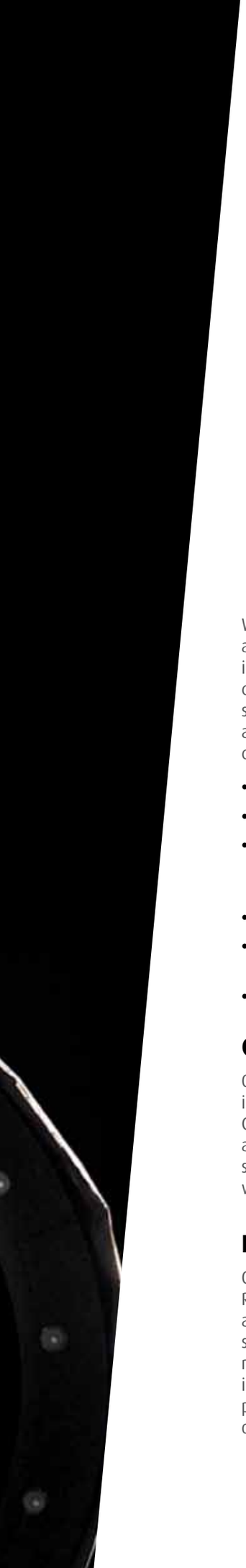
- ***Elbit Systems Awarded a Contract to Supply Advanced Electro-Optics Systems to the Israeli Ministry of Defense***
- ***Elbit Systems Awarded a Contract to Supply Helicopter DIRCM Systems to an Asian Army***
- ***Elbit Systems Awarded Contracts to Supply DIRCM Self-Protection Systems for European and Asian Customers***
- ***Elbit Systems' DIRCM Systems Successfully Demonstrated on Airbus C295 in NATO EMBOW 15 Trials***
- ***Elbit Systems Awarded a Contract to Supply Advanced DIRCM Systems to an Asia-Pacific Country***

ISR

Elbit Systems' focus is to ensure that customers achieve and maintain information superiority and battlefield intelligence dominance by supplying a continuous flow of ISR information for all levels, from the tactical to the strategic, across land, sea, air and space.



For space applications, Elbit Systems Electo-optics - Elop develops advanced panchromatic and multi-spectral cameras. Several of Elop's cameras are presently orbiting and operational in various space programs.



INFORMATION
superiority and battlefield intelligence
DOMINANCE

With one of the most comprehensive intelligence, surveillance and reconnaissance (ISR) systems and product ranges in the industry, we are well equipped to handle increasing ISR demands with a diverse array of core competencies and strategic acquisitions in key fields. We currently command a full range of technologies and capabilities in all ISR disciplines. Our solutions include:

- Integrated ISR management centers
- ISR platforms – UAS, USVs and ground ISR platforms
- Sensors – Visual Intelligence Sensors (VISINT), Signal Intelligence Sensors (SIGINT) and management of Open Source Intelligence (OSINT)
- Exploitation systems
- Communications and network capabilities – air, sea and land
- High-level intelligence management IT systems

Command and Control

Our integrated Operational C^2 Headquarters System, TORC^{2}H™, is a force multiplier that communicates with all external C^2 applications and ISR centers. It generates situational awareness to all disciplines in the land battle space and supports the HQ operational cycle by connecting commanders with operations, firing units, intelligence and logistics.

ISTAR Management Center

Our Intelligence, Surveillance, Target Acquisition and Reconnaissance (ISTAR) Management Center (IMC) is an advanced, multi-dimensional and configurable decision support set of tools, adaptable to all command levels, from national HQ to battlefield commanders. It assists in achieving intelligence dominance for the net-centric battlefield by providing decision makers with a real-time situation picture of the theater.

Our Mobile Arena Dominance ISTAR Center (MADIC) is a mobile C^2 and All Source Intelligence Center (ASIC) for improved operational performance. A generic infrastructure for mobile management, C^2, exploitation and intelligence systems, MADIC provides a centralized and integrated management center for local forces, providing full interoperability with external forces.

Electro-optics Sensors

Spaceborne Reconnaissance Systems – We specialize in advanced research on space telescopes and space cameras for military, government and civilian space applications, in different wavelengths. For three decades, we have been engaged in the development, manufacturing, and testing of advanced EO systems for a variety of space applications including:

- Research space telescopes
- Space cameras, including ERMS, EROS, Venus and Ofeq
- Hyperspectral systems

Airborne Reconnaissance Systems – Our high performance Image Intelligence (IMINT) CONDOR™2 systems are a key element of LOROP (Long-Range Oblique Photography) for installation in a variety of fixed-wing aircraft. These systems provide real-time reconnaissance, 24/7 coverage, and enable image storage or real-time transmission through wideband data links to ground exploitation stations. In the field of vertical photography, the CONDOR™ TAC tactical photography system is an aircraft-mounted reconnaissance pod which enables high resolution and wide area coverage vertical photography of the imaged area, while flying at very low, medium or high altitudes and high velocities. CONDOR TAC's ability to provide high-resolution images from these altitudes significantly reduces the risk to the aircraft. Its unique design enables the CONDOR TAC to withstand a wide temperature envelope, reducing the sensitivity of the sensor system to temperature variations.

HERMES™ 450 *offers high-performance ISR capabilities in principal intelligence disciplines: IMINT – Imagery Intelligence, SIGINT – Signal Intelligence (COMINT and ELINT), MASINT – Measurement and Signature Intelligence.*

Long-Range Oblique Photography (LOROP) *– Air IMINT systems provide realtime reconnaissance and electro-optical coverage 24/7 over very wide areas from long standoff and medium to low vertical distances.*

Full designation capability, 24/7 with PLDR – Portable Lightweight Designator/Rangefinder combined with the ***CORAL-LS thermal imaging "See-Spot" camera****.*

AMPS *(Advanced Multi-sensor Payload System) for airborne intelligence gathering.*

Observation and Surveillance Stabilized Payloads – Our stabilized electro-optical payloads provide optimal observation, surveillance, tracking and targeting capabilities under even the toughest conditions. Optimized for fixed and rotary-wing aircraft, UAS, combat vehicles, naval platforms and ground applications, our payloads include up to seven sensors, MWIR FLIRs (3rd-generation), full HD day channels with zoom, spotters, eye-safe rangefinders or laser target designators, and laser pointers in a stabilized turret. Our stabilized payloads include AMPS (Advanced Multi-Sensor Payload System) for airborne intelligence gathering, CoMPASS™ (15" Compact Multi-Purpose Advanced Stabilized System), DCoMPASS™ (our high-end, high-definition video, 15" Digital CoMPASS™) and Micro CoMPASS™ (8" Micro Compact Multi-Purpose Advanced Stabilized System).

Reconnaissance and Observation System

Long-Range Reconnaissance and Observation System – LORROS™ – A 24/7 ground long-range, remote-controlled reconnaissance and observation system, LORROS is designed for medium and long-range surveillance. It is ideal for border and coastal surveillance, critical infrastructure protection, intelligence gathering, artillery spotting and target acquisition with either open frame – side by side – sensor architecture or closed frame multifunctional sensor blocks.

Laser Systems

Bringing threats into sharper focus, our cutting-edge laser systems have been tested and proven in combat for more than three decades. We hold an international position at the forefront of laser technology, with thousands of systems supplied and in-service worldwide. Products include: airborne, ground and maritime laser designators and range-finders with eyesafe wavelength, laser radar (LADAR), and light detection and ranging (LIDAR) systems, including helicopter warning systems.

PLDR II

The Portable Lightweight Designator/Rangefinder (PLDR II) is a lightweight, man-portable laser designation and targeting system that allows war fighters to rapidly and effectively fire on hostile targets. The incorporation of the CORAL-LS thermal imager in the system enables designating targets day and night.

Signal and ELINT Payloads

For airborne manned and unmanned platforms, we offer solutions that detect, identify and locate ground-based, airborne and shipboard emitters. Our solutions include Emerald AES-212V (ELINT), SkyFix (COMINT) and COMINT-DF/ELINT/COMJAM/DFECM.

SIGINT Systems

For airborne manned and unmanned platforms, we offer signal intelligence (SIGINT) solutions that detect, identify and locate ground-based, airborne and shipboard emitters. Our operational and field-proven solutions include the Emerald AES-212, a modular airborne ESM/ELINT family of systems for comprehensive and simultaneous multi-radar detection, direction and target position, and COMINT/DF HF-6 GHz systems for delivering a complete order of battle while overcoming the challenges of highly dense electromagnetic environments. These solutions effectively manage sophisticated communications systems along the entire frequency range. They are automatically adaptable and offer flexible COMJAM and ECM capabilities.

Integrated Operational C² Headquarters System TORC²H™ *is an automated, sensor-integrated C² solution for border security. It closes the sensor-to-shooter loop and optimizes data collection and border patrol operation.*

Data Links

Our advanced, field-proven fourth generation data links for airborne platforms including UAS and micro/mini-UAS are based on generic modules that conform to all modern payload systems and support high-rate digital and analog data communications. The tactical video links download video and telemetry data from UAS directly to ground, airborne and naval forces. This comprehensive video network solution can be deployed in all airborne and ground platforms, and for all types of portable display units for mounted or dismounted troops. Ground forces also benefit from these all-digital, ruggedized transceiver solutions that can receive, display and disseminate video and data in real time.

Sensor Exploitation Systems

MIES (Mobile ISTAR Exploitation System) is a mobile station for all types of sensor monitoring. MIES centralizes all necessary functions for imagery
from sensors, payloads, analysis and production workflows. It receives, processes, manages and displays data in near real time and provides tools to simplify the interpretation process. MIES can be deployed in a single or multi-workstation.

ICE (Integrative Component-based Exploitation system solution) is a fully integrative multi-sensor exploitation system designed as an end-to-end solution for the entire operational cycle of satellite and airborne digital imagery. With the ability to incorporate this data and complementary intelligence information, interpreters benefit from a fully detailed intelligence information overview.

IT Solutions

The Wise Intelligence Technology (WiT™) solution brings together the experience we have gained in the intelligence and IT fields into a comprehensive solution for intelligence organizations. It provides advanced tools for supporting every stage of the intelligence process.

EW & SIGINT

Electromagnetic Spectrum Warfare Survivability – Situational Awareness and Targeting Solutions for Superiority in the Modern Battlefield

PAWS Family, *the Passive IR Missile Approach Warning Systems – a highly effective family of operationally deployed staring IR-based missile approach warning systems.*

SPECIALIZED SYSTEMS

for EW, IR and communications, intelligence, and solutions for air, sea and land applications

Elbit Systems EW and SIGINT – Elisra, a world leader in its field for five decades, specializes in end-to-end, flexible, multi-function electronic warfare (EW) and signal intelligence (SIGINT) solutions. These systems serve as force-multipliers for various applications across the entire electromagnetic spectrum – radio frequency (RF) and electro-optics (EO). They comprise EW, Intelligence (SIGINT and MASINT), IR, RF and communications (C^4I and data links) solutions. Our systems, deployed on a variety of airborne, naval and ground-based platforms, are in use by the Israel Defense Forces (IDF) as well as by numerous other countries worldwide.

SIGINT/EW Comprehensive Solutions

Integrated Intelligence and Electronic Warfare (IEW) solutions

Elbit Systems EW and SIGINT – Elisra (Elisra) provides specialized electronic warfare (EW) and signal intelligence (SIGINT) systems. Our end-to-end, flexible, multifunction integrated land/sea/air SIGINT-EW systems can operate over the entire electro-magnetic spectrum band, and are already in use by numerous countries worldwide.

APLAUD

The Active and Passive, Land and Air Unified Defense Solution is based on a pioneering approach to integrated SIGINT and EW that is intended for air, land and naval battlefield scenarios. The solution is ideal for a wide range of missions in a variety of theaters and can be deployed on varying fixed and mobile platforms, including helicopters. APLAUD is a flexible, multi-function, multi-mission and end-to-end response solution to existing and emerging threats across the entire electromagnetic spectrum. It enables seamless integration of interoperable elements, including ESM/ELINT, COMINT, ECM, COMJAM and C^2, into a single solution that is operated and controlled by one entity. APLAUD provides a complete SIGINT and EW real-time picture of the arena with simultaneous operation of elements for Electronic Support (ES) and Electronic Attack (EA). By combining all elements into one comprehensive and customizable solution, a new level of capability is achieved, enabling intelligence gathering, processing and exploitation, EW countermeasures and C^2.

Air Keeper

A force multiplier for mission aircraft, this pioneering, integrative approach to SIGINT and EA assists in quickly and effectively closing the intelligence loop as well as performing EW missions. Air Keeper enables the seamless integration of a wide range of intelligence gathering and EW capabilities, enabling powerful control over the electromagnetic spectrum. They combine operational elements – ESM/ELINT, ECM, COMINT, COMJAM, and C^2 – and are all operated and managed by a single entity onboard a platform. This new approach allows any existing cargo, transport, or passenger aircraft to be converted into a strategic and tactical special mission aircraft. These missions can range from intelligence gathering to EA, which can also be integrated with existing self-protection solutions onboard the platform. Enabling collection, processing and exploitation, as well as electronic countermeasures, this solution provides mission commanders with a complete, real-time, electronic picture of the arena. Air Keeper targets communications, radar and other assets, reducing the effectiveness of enemy radar and communications systems.

***ALL-in-SMALL™** – A next-generation unified EW Suite for airborne protection*

Self-Protection Suites for Airborne Platforms

Our multi-spectral self-protection suites for airborne platforms, including combat, mission and transport, VIP aircraft, as well as helicopter and UAS, are recognized worldwide as highly advanced solutions with well-established track records. Redefining mission parameters and significantly shortening the sensor-to-weapon cycle, our solutions boost mission performance and platform survivability. A new generation of solutions utilizes innovative miniaturization and integration technologies to combine Defense Aid Suites (DAS) and Electronic Support Measures (ESM) into a single unit, enhancing performance while reducing overall footprint. Our solutions include Radar Warning Receivers (RWR), Laser Warning Systems (LWS), Passive IR Missile Warning Systems (MWS) and active countermeasures – including RF jamming, chaff/flare and Directional Infrared Counter Measures (DIRCM).

All-in-Small™ Our complete Airborne Self-Protection Suite is a cutting-edge, integrated EW suite in one single Line Replaceable Unit (LRU), with advanced EW capabilities. All-in-Small is comprised of an EW Controller (EWC), digital Radar Warning Receiver (RWR), IR Missile Warning System (MWS), advanced Laser Warning System (LWS) and Chaff/Flare Dispensing (CFD) system. The system is extremely small and lightweight, and has a modular and open architecture with multiple interface abilities. Due to its high-range detection and Direction Finding (DF) accuracy, the suite can be effectively integrated with DIRCM by operating both in the same wavelength. By doing so, extremely fast hand-over from IR PAWS to DIRCM is enabled and deception probability is enhanced. All-in-Small can be provided together with geo-location and net-centric capabilities as well as with IR-Centric™ – a multi-spectral emitter.

IR CENTRIC, a unique IR-based concept and the only operational solution of its kind, is a measurable self-protection force multiplier for airborne platforms. Utilizing the industry standard Infra-Red-based Missile Warning System (IR MWS), IR-CENTRIC harnesses the data transmitted by its sensors to facilitate a multi-role, multi-function nexus. Providing mission protection and safety enhancement from a single system, the solution responds to the most modern airborne and ground operational requirements. IR CENTRIC offers enhanced missile warnings, hostile fire detection for optimal protection and a panoramic view of the battlefield for situational awareness and collision alert. These warnings enhance aircraft safety, navigation support and battle damage assessment including recording, analyzing, learning, and mission support.

The PAWS™ family of systems is comprised of next-generation IR Passive Missile Warning Systems (MWS) for all aircraft types. PAWS is a combat-proven, comprehensive, self-protection solution for all airborne platforms, including fixed-wing and rotary-wing, as well as for a variety of advanced military (combat, mission, transport and helicopters) and civilian aircraft. The system delivers cutting-edge protection

PAWS™, the Passive IR Missile Approach Warning System, *is a highly effective family of operationally deployed staring IR missile approach warning systems.*

against the most challenging types of threats in today's modern battle arenas. In addition, PAWS provides early threat warning and automatic management of all onboard countermeasures – such as flare dispensers and DIRCM – to other EW and/or avionic systems for centralized display and management, as well as for further threat handling. In addition, the PAWS processing unit supports expanded capabilities such as radar warning and laser warning. PAWS operates either as a stand-alone, self-contained system or as part of a complete EW Suite.

C-PAWS (Commercial Passive Airborne Warning System) provides cutting-edge IR-based comprehensive protection for commercial airlines. C-PAWS boosts an aircraft's survivability by swiftly detecting incoming missile threats and automatically responding with the appropriate on-board countermeasures, such as chaff/flares or DIRCM to divert the threat. In addition, using our unique IR-CENTRIC capability, C-PAWS enhances aircraft safety in the air and on the ground, by enabling high levels of situational awareness. C-PAWS is in use by several airline companies as well as on various VIP platforms, typically incorporating DIRCM – MUSIC™.

Airborne Electronic and Communications Intelligence and Jamming

For airborne manned and unmanned platforms, we offer airborne SIGINT solutions that detect, identify and locate ground-based, airborne and shipboard emitters.

Emerald AES-212 – Electronic Intelligence (ELINT): The modular, airborne and field-proven Emerald AES-212, an ESM/ELINT family of solutions, offers simultaneous multi-radar detection for all types of manned and unmanned aerial platforms. The system delivers sophisticated intelligence gathering capabilities for the detection and analysis of ground-based, airborne and shipborne radar.

SKYFIX – Communications Intelligence (COMINT) and DF: Our COMINT/DF solutions are comprised of advanced signal demodulators, classifiers, fast wide-band receivers and activity detectors. These solutions operate together to ensure smart and rapid interception, identification and pinpoint detection of the most sophisticated signals spanning the full-frequency band, providing a real-time tactical picture of the battlefield.

CELLACTIVE – Cellular COMINT Solutions: Our Airborne COMINT cellular system is capable of monitoring, recording and transmitting GSM phone communications, including both conversations and text messages. The system has source phone location capability and the ability to transmit gathered intelligence information to a variety of sources on the ground via the use of data links. Handling several conversations in parallel, the system's cellular phone configuration locates and blocks incoming and outgoing calls, and can act as a landline or cellular phone with full functionality, including text transmissions.

***DESEAVER** – Decoy Control and Launching System – responds simultaneously to multiple threats by delivering various payloads at accurate time intervals, according to specified anti-missile doctrines and guidelines.*

***TIMNEX II** – is an advanced ESM/ELINT system for submarines, installed in Dolphin Class submarines.*

Electromagnetic Counter Measures (ECM): Our ECM solution simultaneously detects, locates and selectively jams enemy targets – both automatically and manually – delivering the significant operational advantage of pinpoint neutralization of enemy systems while handling multiple threats in parallel. The system brings advanced ECM capabilities to all echelons – strategic, divisional and tactical. By combining advanced tactical and strategic capabilities with complete real-time access to the system, full local decision-making and operational autonomy to forces in the field are enabled. The system includes cutting-edge selective jamming capabilities – and prevents the jamming of the entire battlefield and secondary disturbances by friendly forces. Able to withstand harsh environments, the solution adapts to all platforms and can be positioned close to frontline forces.

SKYJAM – Communications Jamming (COMJAM) Solutions: Our smart, flexible systems for selective jamming are part of our EA family of solutions for manned and unmanned platforms. These systems utilize sophisticated algorithms combined with components based on the most advanced technologies available today, and are able to manage multiple frequency sub-bands, based on predefined threat lists and jamming priorities. These combat-proven systems are in-service with many armies across the world and are SOF (Special Operating Forces) approved.

Naval EW Solutions – Situational Awareness at Sea

We supply modern navies worldwide with cutting-edge systems suitable for the latest generation of corvettes, fast-attack boats and submarines. Our systems range from integrated fifth-generation EW suites (ESM/ECM/ELINT), COMINT/DF, to integrated communications systems and COMJAM.

Aqua Marine is a fully integrable and interoperable ELINT naval solution for all surface vessel types and submarines. This 5th generation lightweight and small-footprint system addresses situational awareness, EA, ship self-defense and ELINT. Designed to operate in littoral and blue water environments, its sophisticated software detects and analyzes all types of threats and can deal simultaneously with even the most advanced vulnerabilities. Channelized and protected against harsh electromagnetic environments, Aqua Marine enables connectivity between platforms for mission coordination. This uniquely flexible and modular solution allows for a customized design of end-to-end EW suites.

NATACS 2020 is a new generation of on-board COMINT/DF systems. With the ability to cope with advanced agile frequency communications radios, NATACS 2020 is fully integrated and uniquely equipped with ultra-fast Wide Band Receivers (WBR) and DF systems.

NATACS' outstanding scanning rates enable the handling of extremely dense electromagnetic environments in the HF/VHF/UHF/HUHF frequency bands, characterized by frequency-hopping, burst and other agile transmissions. The system's COMINT antenna can be integrated with an ESM antenna to enable maximum utilization of the vessel's mast and significant space savings. Combining the data extracted by NATACS 2020 with the data obtained from on-board ESM systems enables completion of the mission-critical tactical naval picture.

HERMES™ 900 *– Multi-role, Medium-Altitude Long-Endurance (MALE) UAS.*

Comprehensive Line of Advanced Solutions for Unmanned Aircraft Systems (UAS)

Based on innovative technology and decades of hands-on experience in a wide range of scenarios, our cutting-edge solutions meet the needs of diversified UAS-related missions. Supporting all types of unmanned aircraft platforms, applications and functions, our comprehensive solutions are well-suited for Intelligence, EW and HLS applications – including rapid and precise information gathering, targeting and jamming. Our families of advanced SIGINT and EW solutions support the smooth integration of information dissemination with C^4I capabilities – ensuring the most effective utilization of fire power. This line includes our airborne ELINT, COMINT and jamming systems, all part of our comprehensive SIGINT and EW suite. This suite effectively transforms a UAS into an active and integral platform for the entire array of self-defense, intelligence gathering and jamming needs across the spectrum of combat environments.

Our suite includes EMERALD – AES-212 ELINT/ESM, our modular airborne ESM/ELINT system for comprehensive radar detection; SKYFIX, our operational and battle-proven modular COMINT/DF system, offering tactical intelligence reception in real-time over wide rural and urban areas with precise DF and enabling digital audio-recording; CELLACTIVE, our cellular phone surveillance and location system for monitoring, recording and transmitting GSM phone communications; and SKYJAM COMJAM, our battle-proven, modular, flexible, standalone, future-ready configuration of customizable, interoperable and interconnected airborne COMJAM payload components for UAS.

C^4ISR

We are the developer of the C^2 system for Anti-Ballistic Missiles (ABM) defense, including the Arrow missile program, the David's Sling anti-missile defense program, and the core of the Israel Test Bed (ITB) simulator for Ballistic Missile Defense (BMD) systems.

Our C^4ISR network-centric solutions integrate system elements into a single communications grid, enabling effective end-to-end real-time responses. They support intelligence management, collection, processing and distribution networks, while maximizing firepower, increasing survivability and maintaining an accurate real-time situational picture of the entire arena. These C^4ISR systems significantly decrease the sensor-to-shooter cycle and meet the most critical and complex battlefield challenges.

Exceptionally adaptable SIGINT systems provide continuous intelligence gathering, classification processing, and advanced analysis for all levels – delivering full tactical mobility and autonomous real-time responses while in action.

Fully customizable, combat-proven Naval EW solutions deliver situational awareness, electronic intelligence and ship self-defense.

Combat Intelligence Suite for Tactical and Armored Fighting Vehicles (AFV)

Cutting-edge, customizable and modular, our fully-integrated, multi-sensor and multi-mission intelligence suite for military forces, border patrols and homeland security (HLS) agencies can be integrated with any tracked or wheeled vehicle in the field. Integrated with basic configurations of COMINT/DF, radar and electro-optic sensors, the system can integrate multiple sensors of any type for a wide range of missions and can optionally include additional sensors as required.

Cyber

Our Locked Wave – Cyber RF intelligence system covers both the physical and cognitive aspects of the electromagnetic spectrum on land, at sea and in the air. Locked Wave operates in active and passive modes, providing access, inspection and manipulation of encrypted airwave-transmitted communications – such as Wi-Fi. Designed for military forces as well as HLS agencies, the system can operate on a standalone basis or can be integrated as an add-on with existing intelligence solutions, as well as with EW solutions in a soft-kill capability. The system provides high-quality Intelligence in real-time, enables access to encrypted data stored in Wi-Fi communications, allows data storage, and decrypts all Wi-Fi standard encryptions, including WEP, WPA and WPA2.

Radar Capabilities

We provide an array of specialized Ground Surveillance Radar (GSR) systems that can be integrated with ISR ground solutions. Foxtrack™ is a lightweight, compact, man-portable radar that can be carried by two operators, and installed either on a vehicle mast or as a tripod-mounted configuration. Foxtrack provides integrated, real-time tactical surveillance, intelligence gathering, target detection, classification and identification of human and/or vehicles operating in the area of interest. Fully operational, it is in use by military, border patrol and HLS agencies world wide.

The FPR-10 is a Foliage Penetration Radar providing long-range, accurate, high-resolution detection of vehicles and personnel behind foliage. The FPR-10 is designed to withstand harsh environmental conditions as well as foliage interferences and disturbances.

RF Remote Counter Improvised Explosive Devices (RF RCIED) Systems

Built on three decades of recognized combat-proven experience in Remote Controlled Improvised Explosive Devices (RF RCIED) protection solutions, our systems are offered in man-pack, vehicle-mounted and portable rolling case options for use by military, HLS and police forces. The Miniature Reactive Jammer (MRJ) family is the latest generation of these systems, developed to protect ground forces, HLS entities, special-forces, penetration units, small vehicular convoys, border patrols and other forces entering hostile areas. The systems can be configured to jam RF RCIED in either reactive or active mode – or a combination of the two – working simultaneously.

***MRJ** – Miniature Reactive Jammer – an RF-based family of systems that effectively counters improvised explosive devices reactively, actively or both simultaneously, and is offered in man-pack, vehicle-mounted and portable rolling case options for use by military, HLS and police forces.*
We are the developer of the the C² system for Anti-Ballistic Missiles (ABM) defense and the core of the Israel Test Bed (ITB) simulator for Ballistic Missile Defense (BMD) systems.

***FOXTRACK™** is a portable Ground Surveillance Radar system that is lightweight, compact, man-portable and can be carried by two operators, soldiers, special operations forces or security personnel.*

Real-Time Data Link Communications

Our line of advanced, field-proven, fourth-generation wireless communications systems are designed for deployment onboard all airborne platform types – Medium-Altitude Endurance (MAE), tactical, and mini/micro UAS. These comprehensive video and data networking solutions are based on generic modules that correspond with all modern payload systems, providing high-rate digital and analog data communications. Our data link systems enable the download and dissemination of real-time video and telemetry directly to ground, airborne and naval forces. The data can be displayed on all types of stationary, vehicular, portable and wearable monitors.

Microwave Components – Vertical In-House Capabilities

We have five decades of proven experience in microwave and microelectronics capabilities. In addition, we are a well-known supplier of best-in-class components, super-components and sub-systems for a wide range of RF and microwave applications, covering the frequency range of 1MHz to 40GHz. Our in-house design and production of highly advanced microwave components contributes to our comprehensive portfolio.

2015 HIGHLIGHTS

- ***Elbit Systems Launches Air Keeper – A Unique Airborne SIGINT and EW Solution***
- ***Elbit Systems Awarded Israeli Ministry of Defense Contract to Supply Airborne Electronic Warfare Systems***

ELBIT SYSTEMS OF AMERICA

Elbit Systems of America, LLC, and its subsidiaries throughout the U.S. have earned a reputation for precision and quality solutions by providing systems that anticipate and deliver on customer needs. Leveraging its relationship with the Elbit Systems' worldwide organization, Elbit Systems of America offers many advanced combat-proven and commercially tested systems.

From sophisticated advanced navigational solutions for pilots to electronic systems for infantry soldiers, Elbit Systems' products and solutions are operational on all fronts.

REPUTATION throughout the U.S.

Elbit Systems of America is a leading provider of high performance products and systems and life-cycle sustainment and support solutions, focusing on the defense, homeland and cyber security, commercial aviation and medical instrumentation markets.

With facilities throughout the United States, Elbit Systems of America is dedicated to supporting those who contribute daily to the safety and security of the United States.

Decades of experience enable Elbit Systems of America to deliver solutions that anticipate real world performance requirements. From award-winning vision-based cockpit systems, commercial and military displays, to high-quality, maintenance and logistical support services, Elbit Systems of America is a market leader for innovative solutions.

Elbit Systems of America serves customers through several strategic business units with facilities throughout the United States:

- **Airborne Solutions** provides design, development, production, and life-cycle support of mission-critical systems for the U.S. and allied military fixed-wing and rotary aircraft.
- **Sensor and Fire Control Solutions** supplies electro-optic systems, sensor-based solutions, defense systems for land combat vehicles and dismounted soldiers, C4-based solutions as well as life-cycle support for the U.S. military, allied military and homeland security markets.
- **Services and Support Solutions** delivers depot level repair, aerostructures manufacturing, contractor logistics support (CLS), vehicle refurbishment and life-cycle support for sophisticated military electronic systems and components.
- **Commercial Aviation – Kollsman** leverages its history as a pioneer in aviation to provide enhanced vision systems (EVS), head-up displays (HUD) and aircraft instrumentation to meet the needs of commercial aviation customers.
- **Medical Instruments – KMC Systems** provides contract design, development, manufacturing and field service support of FDA and EU-regulated medical instrumentation.
- **Vision Systems International LLC (VSI) and Rockwell Collins ESA Vision Systems LLC (RCEVS),** companies jointly owned with Rockwell Collins, are a leading global supplier of helmet-mounted cueing and helmet-mounted display systems for fixed-wing tactical fighter aircraft.

***Bradley Fighting Vehicle** enables warfighters to complete their mission safely and effectively with advanced processing and controls.*

Elbit Systems of America supplies key subsystems for the V-22 Osprey including primary displays and digital maps.

Elbit Systems of America's Customers – Partners in Excellence

Elbit Systems of America's commitment to provide the highest standards of quality, performance, precision and reliability has led to long-standing customer relationships with military agencies, as well as defense, homeland security, medical equipment OEMs and commercial aviation customers. These relationships include the U.S. Department of Defense, the U.S. Department of Homeland Security, the U.S. Army, U.S. Navy, U.S. Marine Corps, U.S. Air Force, U.S. Coast Guard, Boeing, Lockheed Martin, Federal Express, General Dynamics, Gulfstream, General Electric, Northrop Grumman, Raytheon, BAE Systems, Bell Helicopter, Bombardier, Cessna, Sikorsky, the Dutch Air Force and a number of other foreign governments.

Systems and Support for U.S. Military Platforms

Elbit Systems of America's business units, along with other Elbit Systems' capabilities, use combat-proven technologies to rapidly produce effective solutions that meet the mission critical needs of U.S. warfighters. Providing capabilities through the entire life-cycle of complex systems, from design and deployment to depot level repair, Elbit Systems of America works with the U.S. Armed Forces to ensure combat readiness.

Elbit Systems of America designs and maintains a broad range of products and systems, including:

- Advanced cockpit systems, helmet-mounted sights, ISR systems and fire control systems for the AH-64 Apache, AH-1 Cobra and Super Cobra, UH-1, OH-58, CH-53, UH-60, CH-47, V-22, HH-65, MH-60S, MH-60T, AH-1, F-15 Eagle, F-16 Falcon, F/A-18 Hornet and Super Hornet and F-35 Lightning II.
- Cockpit navigational systems for the V-22 Osprey, A-10 Thunderbolt, F-16 Falcon, F/A-18 Hornet and Super Hornet, UH-60 and C-130.
- Mission and weapons processing for the M2A3 Bradley Fighting Vehicle, Apache, V-22, AH-1, and F-16 aircraft.
- Laser seekers for the JDAM, Griffin missile and Viper Strike precision-guided munitions (PGM).
- Contractor logistics support for the C-20, C-23, C-26 and UC-35 aircraft.

Additionally, we are a leading source for high-performance night vision devices and laser targeting systems for the U.S. Marine Corps, U.S. Army and U.S. Air Force. Backed by decades of proven performance, Elbit Systems of America also provides depot level repair, manufacturing and logistics support of sophisticated military electronic systems and components. Extensive quality control procedures, combined with a highly experienced technical staff, support our goal to consistently outperform customer expectations on service and turnaround time.

The EJTAC Ltd. *is the lightest weight laser designator/rangefinder available and provides Joint Terminal Attack Controllers a full mobile solution for terminal guidance of munitions, laser hand-off to aircraft, and direction and distance finding.*

JEDEYE *gives pilots a different helmet mounted display perspective. Ideal for attack and transport rotorcraft, JEDEYE provides an ultra-wide field of view, higher resolution, advanced sensor fusion and improved situational awareness for enhanced combat effectiveness.*

Expertise Derived from Experience

Elbit Systems of America brings in-depth understanding of customer needs and decades of experience in tailoring and integrating complex solutions to the large-scale programs it has successfully performed. Through VSI and RCEVS, our joint ventures with Rockwell Collins, we developed and are now producing the advanced Helmet-Mounted Display System for the F-35 Joint Strike Fighter (JSF). Elbit Systems of America's industry achievements include the successful development of the first high-performance strap-down, semi-active laser seekers that do not require moving parts or gimbals.

This new seeker is effective against moving targets and is now incorporated in several key laser-guided munitions programs for the U.S. military.

We Know the Mission

Ground C^4I and battlefield information systems greatly contribute to mission success by delivering mission-critical information. In addition, we process and interpret data and then present a clear scenario picture to all levels of command. Armed forces can leverage available resources for quick coordination and response.

Commercial Aviation – Kollsman

Elbit Systems of America's proven technologies provide commercial and business aircraft markets with leading enhanced vision systems (EVS) and head-up display (HUD) solutions. Our core products provide operators the ability to execute precision approaches and safely land in fog, rain, snow and other reduced visibility conditions. Elbit Systems of America creates and delivers innovative solutions that meet and exceed requirements for the next-generation air transportation system.

Elbit Systems of America remains focused on improving aircraft safety and operations through continued development of advanced cockpit technologies. In 2014 we introduced our latest 3rd generation EVS called EVS Superior Performance (EVS-SP). EVS-SP was selected by Gulfstream for the newly announced G500 and G600 aircraft. This selection continues Elbit Systems of America's relationship with industry icons such as Gulfstream. Our EVS products are certified on 14 aircraft platforms including Gulfstream's G150 through G650 business jets and FedEx MD-10, MD-11, B757, B767 and B777 air transport aircraft. The total number of EVS systems delivered to date is in excess of 1500.

Enhanced Vision System (EVS) *– improves flight safety and situational awareness.*

Continuing to work with world regulatory agencies and standards groups to enhance the operational benefits of its core products, Elbit Systems of America's effort will culminate in revised EVS rules issued by the U.S. FAA.

Additionally, Elbit Systems of America has certified new technologies for head-up displays, shattering size boundaries by offering the Advanced Technology HUD (AT-HUD) for the Challenger 604 retrofit market, the Canada Regional Jet (CRJ) airline, and VIP markets.

Medical Instruments

In the medical instruments field, Elbit Systems of America has expanded its portfolio to include fully automated in-vitro diagnostic analyzers and sample handling systems for the clinical diagnostic laboratory, therapeutic devices utilizing groundbreaking bio-technologies;and high-volume laboratory automation for diverse medical applications.

2015 HIGHLIGHTS

- *Elbit Systems of America awarded contract for the upgrade of C-1A aircraft for the Brazilian Navy*
- *Elbit Systems of America awarded contract for the U.S. Customs Border Protection Integrated Fixed Towers Project*
- *Elbit Systems U.S. subsidiary awarded contract to provide logistics support for the United States Air Force's F-16 head-up displays*
- *Elbit Systems of America awarded two contracts to upgrade U.S. Marine Corps AH-1W attack helicopters*
- *Elbit Systems of America began testing of the WideBridge™ solution, for mission-critical secure broadband services, with the U.S. Department of Homeland Security*
- *Elbit Systems U.S. subsidiary awarded contract to provide additional Apache Aviator Integrated Helmets to the U.S. Army*
- *Elbit Systems of America and Rockwell Collins introduced the Digital EyePiece NVCD for JHMCS*

COMMERCIAL AVIATION

We offer cutting-edge commercial aviation systems and solutions that provide regional and business transport airplanes with technological differentiators. We also offer integrated solutions for commercial helicopters including an integrated modular avionics (IMA) suite and enhanced awareness applications.

***Skylens™** – The innovative wearable head-up display (HUD) packed in a lightweight, easy-to-install device, displays high-resolution information, images and video on a high-transparency visor providing superior see-through transmission.*

Advanced AVIONICS & COCKPIT TECHNOLOGIES for COMMERCIAL AVIATION

We continuously leverage our expertise in military technologies to expand our infrastructure and product line to support our business expansion into the growing commercial aviation market.

Our commercial aviation business lines include the following products:

Enhanced Flight Vision Systems
Our Enhanced Flight Vision System (EFVS) merges a unique family of HUDs and cutting-edge Enhanced Vision System (EVS) cameras. The resulting solution combines with our synthetic vision systems (SVS) to provide pilots with exceptional situational awareness and the ability to detect runway lights and ground features in low-visibility conditions. Existing regulations enable aircraft equipped with EFVS to gain increased operational landing credit.

Avionics
Our extensive experience in commercial aviation is based on the development and production of cutting-edge certified avionics systems, such as computers, processors and a variety of displays. For the past decade, we have been engaged in avionics integration and upgrade programs for commercial fixed-wing and rotorcraft applications.

Our avionics solutions contain open architecture hardware and software, which is enabled by our integrated modular avionics (IMA) approach. It reduces the dependence between the platform and the system, and eases the development and integration.

Enhanced Awareness Applications
We supply a certified enhanced awareness suite for rotorcraft in the form of software applications, including digital maps (DMAP), a helicopter terrain awareness and warning system (HTAWS) and an electronic flight bag (EFB).

Power and Control
Ferranti Technologies, our UK-based subsidiary, offers a comprehensive range of power-related products, including power conversion, energy storage, motor and generator control, power supplies and distribution. These products are designed and engineered for large commercial airliners and both regional and business jet applications. Our skilled electronic engineers work closely with our customers to ensure that their requirements are correctly interpreted and that the resulting solution is fully tailored and compliant.

Elbit Systems provides high-end technology products for commercial aviation based on proven military technologies.

"Elad" firefighting squadron

Commercial Aviation Aerostructures

Elbit Systems - Cyclone Ltd., our Israel-based subsidiary, is engaged in aircraft and helicopter maintenance, and in the production of aerostructure component assemblies for commercial aircraft. For more than 40 years, Cyclone has designed and produced metal and composite aerostructures, as well as sub-assemblies and assembly parts for leading commercial aerospace companies and OEMs.

Cyclone's unique assemblies include flight control and aerodynamic surfaces, doors, and specialized aircraft parts for commercial aircraft such as the B737, B747, B767, B787, A-340, SSJ-100, Global Express 5000/6000 and King Air 350. As a result of our advanced technical and engineering capabilities, as well as our rigorous LEAN production practices, Cyclone is a recognized specialist in build-to-print and build-to-spec commercial aerostructures.

Cyclone is certified for AS9100 Rev-C, ISO 9001 and ISO 14000. In addition, Cyclone's quality system is authorized by some of the largest OEMs such as Boeing, Lockheed Martin and Bombardier, as well as by Spirit Aerosystems, the U.S. Air Force, the U.S. Navy and many other AS 9100-2000 advanced quality systems.

Training and Simulation

The King Air B200 Training Center is a comprehensive solution for experienced and trainee King Air B200 pilots.

The training center includes the King Air B200 Full Flight Simulator (FFS), and an advanced, cutting-edge ground school.

The FFS is Level D qualified by Transport Canada (Canadian Aviation Authority), and includes a highly sophisticated "Six Degrees Of Freedom" motion system and a hi-fidelity cockpit with advanced avionics and visual system.

The FFS is a total training solution for B200 pilots, from takeoff, through all normal and emergency procedures, to instrument and visual landing approaches.

The flight and ground school instructors are veteran Israeli Air Force (IAF) pilots, all of whom are King Air B200 Captains, with thousands of flight hours.

EO Countermeasures Systems

Elbit Systems Intelligence Electro-optics - Elop offers a family of advanced, highly effective DIRCM systems for military and commercial fixed and rotary-wing aircraft. MUSIC™ protects military and commercial aircraft from surface-to-air IR missiles (MANPADS) and is installed without impacting the platform's performance.

C-MUSIC™ is a pod-mounted DIRCM system, integrated with the cutting-edge C-PAWS™ Commercial Passive Airborne Approach Warning Systems, specifically designed to defend large commercial jet aircraft or tankers, including the B777, B747, B737, A320 and KC-390.

J-MUSIC™ is a DIRCM system integrated for distributed installation on small to medium-size jet platforms. It can be integrated with various missile warning systems (MWS).

Large area smart displays with enhanced mission capabilities.

King Air B200 Training Center

C-MUSIC™

***ClearVision™** Enhanced Flight Vision System provides proven operational credit along with enhanced situation awareness.*

Firefighting Squadron

Elbit Systems "Elad" firefighting squadron was founded four years ago following the Mount Carmel forest fire. The airborne platform selected for the squadron is a single-engine aircraft, manufactured by Air Tractor, and is capable of carrying approximately 3,000 liters of water and flying three hours without refueling. Elbit Systems has been cooperating with the Israeli Air Force, firefighting units, the Jewish National Fund and the Israel Nature and Parks Authority in developing the squadron's operational procedures and qualifying designated airstrips.

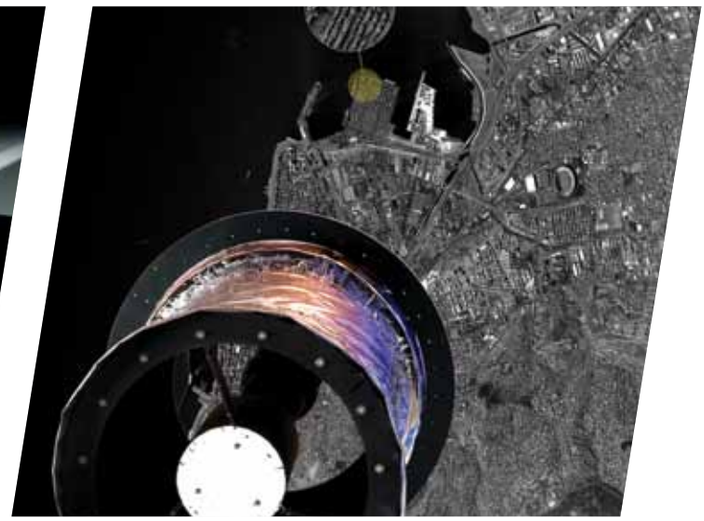
C-PAWS™ for Commercial Airliner Protection

C-PAWS™ (Commercial Passive Airborne Warning System) is a cutting edge, commercial member of the IR-based family of systems that serves as a comprehensive protection solution. C-PAWS™ boosts an aircraft's survivability by swiftly detecting incoming missile threats and automatically responding with the appropriate on-board countermeasures, such as Chaff/Flares or DIRCM (Directional Infrared Counter Measures) to divert the threat. In addition, using our unique IR-Centric™ capability, C-PAWS enhances aircraft safety in the air and on the ground, by enabling high levels of situational awareness.

2015 HIGHLIGHTS

- *Elbit Systems Awarded a Contract to Purchase New Firefighting Aircraft and Operate a Firefighting Squadron*
- *Elbit Systems Delivers Venus Space Camera to French Space Agency*
- *Elbit Systems ClearVision™ Enhanced Flight Vision Systems Provides Advanced Capabilities for the FALCON 5X*
- *Elbit Systems and Nicarnica's Volcanic Ash Solution Approved by Eurostars™*
- *Elbit Systems and ATR Sign an Agreement for the Integration of ClearVision™ EFVS with the New SKYLENS™ Wearable Display Onboard the ATR -600S Aircraft*

INNOVATIVE COMMERCIAL TECHNOLOGIES



Protecting Drivers and Enhancing Road Safety

Annually, over 50 million people worldwide are injured in road accidents, and over one million are killed. More than 50% of road fatalities occur at night due to low visibility, even though only 20% of driving takes place at this time. Regular headlights illuminate about 50 meters of the road ahead, often not leaving the driver enough time to react to avoid obstacles.

BrightEye™, developed by Elbit Systems' subsidiary, BrightWay Vision, deploys the cutting-edge Advance Driver Assistance Systems (ADAS) vision-based technology, making night-time driving easier and safer by providing an image of 250m of the environment ahead of the vehicle. BrightEye offers all the benefits of a rich, natural and intuitive imagery, even during harsh weather (rain, snow, etc.), with real-time sophisticated computer-vision features such as pedestrians, cyclists, animals and other road hazards alerts, assisting the driver to avoid road obstacles and prevent accidents.

BrightEye, which is being marketed to leading auto makers worldwide, is being considered for use in vehicles, buses and trucks. The BrightEye prototype is anticipated to be operational in the coming year. The potential for BrightEye to offer a major benefit to protect drivers and enhance global road safety is significant.

Enhancing Civilian Protection

Observation satellites serve a wide range of functions and applications, including civilian protection, environmental assessment for risks and climate change effects, urban planning aspects related to road density and urban construction, and effects of natural disasters such as earthquakes, floods, avalanches and more. Ongoing observation from space can assist governments in their preparations for protecting populations against a range of threats to human life, or understanding environmental changes in order to develop policies to mitigate environmental impacts. Observation satellites can maintain an orbit for up to several years, providing detailed assessments over long periods of time. However, use of satellite-generated information depends on the ability to photograph clear images to transmit to analysts on the ground. Therefore, satellite cameras are essential parts of the satellite's functionality.

Our cutting-edge electro-optics capabilities have been applied in developing a super high-resolution camera – the Jupiter Advanced Camera – which can identify and capture extremely small images in space while covering an area of hundreds of kilometers. The Jupiter Advanced Camera has market-leading resolution and is the lightest-weight satellite camera in the world, delivering the highest levels of performance.

In Italy, space intelligence is highly advanced, and the Italian Space Agency is known to be one of the leading users in the world of satellite technologies. Our Jupiter Advanced Camera was selected as the camera for the OPTSAT 3000 observation satellite, which was commissioned by the Italian government to support analysis of geophysical areas and contribute to improving the quality of life and protecting the local population.

Smart Energy Solutions for Modern Power Needs

Utilizing our high-power, aqueous supercapacitor (SC) technology, we have developed a full range of energy storage and power management solutions that address a broad spectrum of requirements. These requirements include high power, voltage and energy, extended life-cycle, rapid charge-discharge times, and environment-friendly and smart power management.

Built on our innovative "green" technology, the SC provides a new level of efficiency, power and energy densities. It is cost-effective, with a unique electrode preparation process and an advanced mechanical structure, resulting in highly-effective capacity, extended life-cycle, high energy efficiency and reliability at temperatures from -46°C to +65°C. Our unique patented structure and assembly procedure enables us to customize our SC solutions to our customers' specifications, requirements and applications.

Every one of our novel materials and nanotechnologies has undergone extensive R&D testing throughout every phase of the materials' design, development and implementation. We are proud to have been selected as the Israeli Nanotechnology Company of the Year (2012), for excellence in implementing cutting-edge material and innovative technology.

Applications for our Power Management Solution

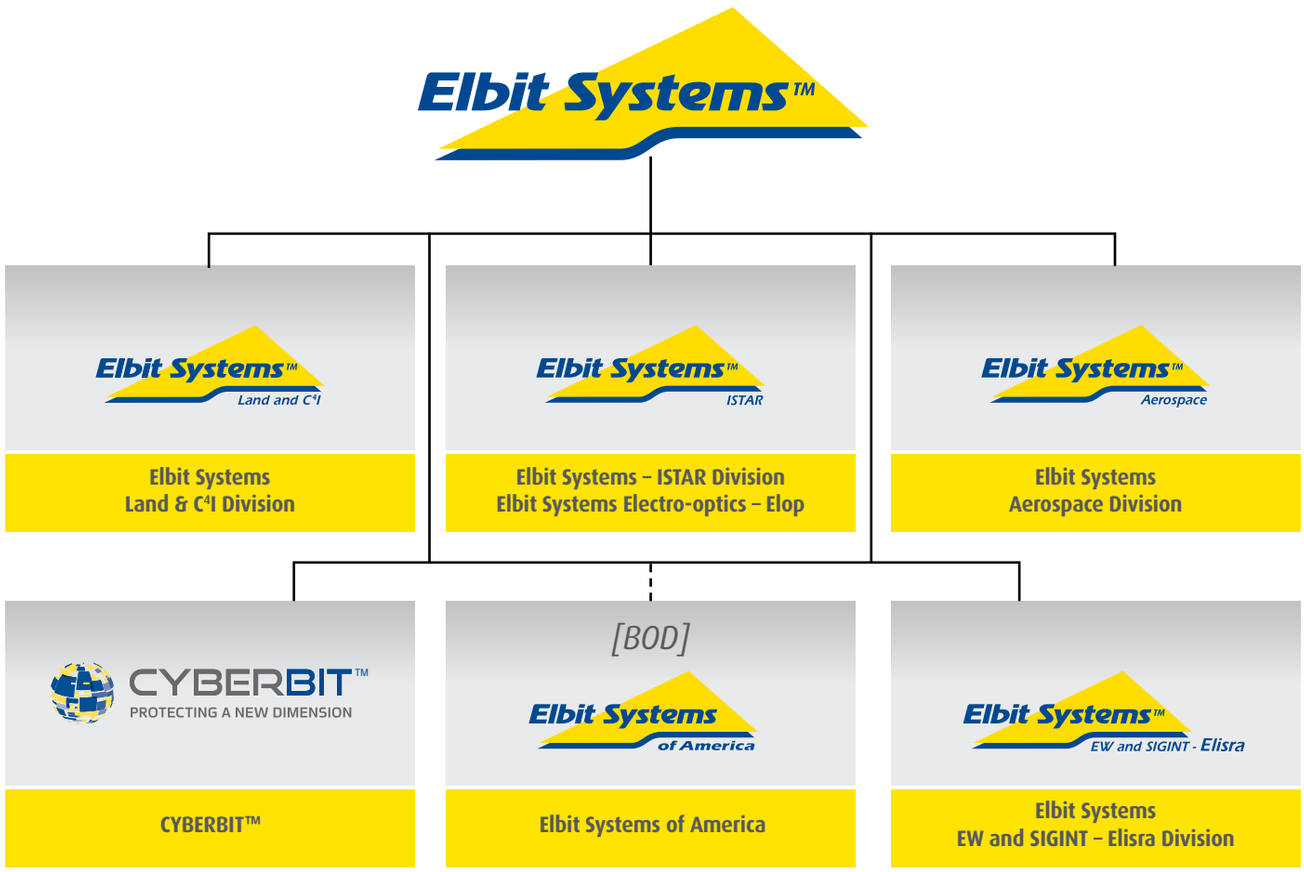
The following SC solutions meet the high power demands for several automotive and industrial applications:

Automotive Industry:
Our Start-Stop solution maximizes the efficiency of internal combustion engines (ICE) in hybrid vehicles, delivers savings in fuel and vehicle emissions and enables regenerative braking. For heavy duty requirements, our Peak Power solution lowers inner resistance and is fully reliable across a wide temperature range, allowing for maximum power availability during cold cranking. Our BatCap Hybrid Power Pack solution combines a battery and an SC for a solution that has the energy density of a battery and the power density of an SC, resulting in the next generation of the common lead acid battery.

High Power UPS:
SCs and PseudoCapacitors (PSCs) are ideal for bridging power during short-term power cuts. Our SCs and PSCs can provide bridging power until the main back-up starts up. Compared with the battery alternative, our SCs and PSCs have a very long life-cycle, can be charged or discharged very rapidly and supply very high power instantaneously.

Trains and Trams:
Our SC and PSC solutions reduce the overall energy consumption of trains and trams, minimizing both the operational costs and CO^2 emissions. With a very low life-cycle cost, our solutions provide full reliability at extreme temperatures, with no need for heating or cooling.

ORGANIZATION CHART



MAJOR SUBSIDIARIES

Elbit Systems Electro-optics - Elop Ltd., is involved in the design, engineering, manufacturing, and support of a wide range of advanced electro-optic systems and products mainly for defense, space and homeland security applications.

Elbit Systems Electro-optics - Elop Ltd.
Advanced Technology Park,
P.O.B. 1165, Rehovot 76111, Israel
Tel: 972-8-938-6211, Fax: 972-8-938-6237
www.elbitsystems.com/elop

Elbit Systems EW and SIGINT - Elisra Ltd., is engaged in the areas of EW suites, airborne warning systems, ELINT systems, artillery C⁴I systems and data links for UAS and guided munitions.

Elbit Systems EW and SIGINT - Elisra Ltd.
48 Mivtsa Kadesh St., Bene Beraq, Israel 51203
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www.elbitsystems.com/elisra.com

Elbit Systems Land and C⁴I Ltd., is the center for our land – based vehicles, C⁴I and communications systems activities.

Elbit Systems Land and C⁴I Ltd.
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Netanya 42507, Israel
Tel: 972-9-889-8080, Fax: 972-9-889-8231
www.elbitsystems.com/landc4i

Elbit Systems of America, LLC – conducts business in the United States through its wholly-owned subsidiaries.

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CORPORATE DIRECTORY

Board of Directors

Michael Federmann – Chairman of the Board
Yoram Ben-Zeev [1,2]
Professor Yuli Tamir [1,2]
Rina Baum
David Federmann
Yigal Ne'eman [1,2]
Dr. Yehoshua Gleitman [1,2,3]
Dalia Rabin [1,2,3]
Dov Ninveh

1 – Member of the Company's Audit Committee
2 – Member of the Company's Financial Statements Review Committee
3 – External Director

Executive Officers

Bezhalel Machlis – President and Chief Executive Officer
Elad Aharonson – EVP and General Manager,
- ISTAR Division
- Elbit Systems Electro-optics – Elop

Jonathan Ariel – EVP, Chief Legal Officer
David Block Temin – EVP, Chief Compliance Officer and Senior Counsel
Adi Dar – EVP and General Manager, Cyberbit
Itzhak Dvir – EVP, Special Matters
Jacob Gadot – EVP, Corporate Projects
Joseph Gaspar – EVP, Chief Financial Officer
Zeev Gofer – EVP, Strategy and Business Development – North America
Shelly Gordon – EVP, Human Resources
Ran Kril – EVP, International Marketing and Business Development
Avi Mizrachi – EVP, Business Development – Southeast Asia
Edgar Maimon – EVP and General Manager, EW and SIGINT – Elisra Division
Ilan Pacholder – EVP, Mergers and Acquisitions – Offset and Financing
Yuval Ramon – EVP, Chief Operating Officer
Gideon Sheffer – EVP, Strategic Planning and Business Development – Israel
Yoram Shmuely – EVP and General Manager, Aerospace Division
Udi Vered – EVP and General Manager, Land and C⁴I Division
Yehoshua Yehuda – EVP and Chief Technology Officer

Elbit Systems of America – Management:

Raanan Horowitz – President and Chief Executive Officer – Elbit Systems of America

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Fax: (718) 236-2641

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a member of Ernst and Young Global
2 Pal-Yam Street
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Tel: 972-4-865-4021
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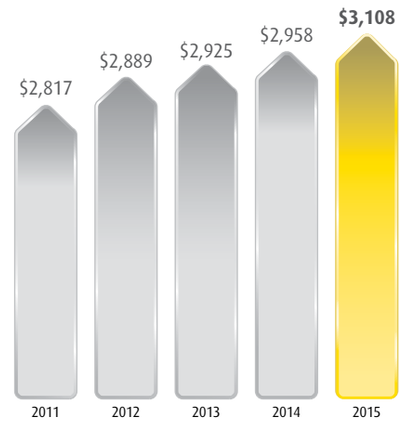
Elbit Systems has approximately 12,000 employees, the majority of whom are engaged in engineering, research and development and other technical areas.

Elbit Systems' shares are traded on the Tel Aviv Stock Exchange and OTC in the United States (NASDAQ:ESLT).

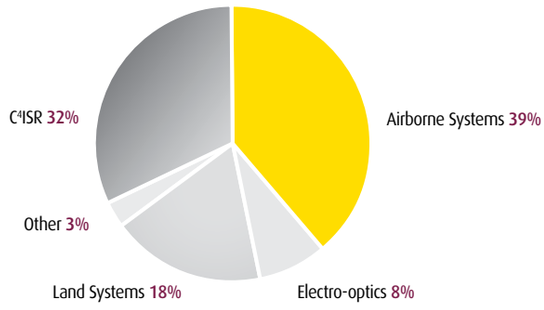
FINANCIAL HIGHLIGHTS

Financial Highlights	2015	2014	2013	2012	2011
Revenues	**3,107,581**	2,958,248	2,925,151	2,888,607	2,817,465
Gross Research & Development	**277,837**	267,691	263,314	276,458	288,668
Net Income	**202,509**	170,980	183,417	167,879	90,288
Diluted Earnings per Share	**4.74**	4.01	4.34	3.97	2.09
Total Assets	**4,126,558**	4,021,281	3,933,168	3,810,705	3,720,510
Shareholders' Equity	**1,402,387**	1,238,895	1,194,169	1,050,626	927,720
Backlog of Orders	**6,564,431**	6,265,439	5,822,140	5,682,903	5,527,953

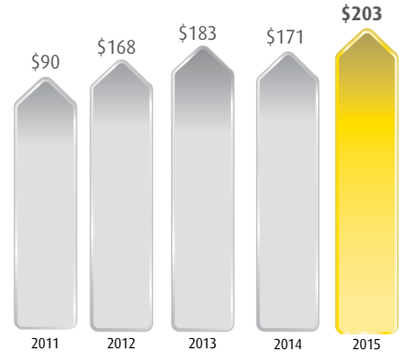
In US$ thousands except for share amounts



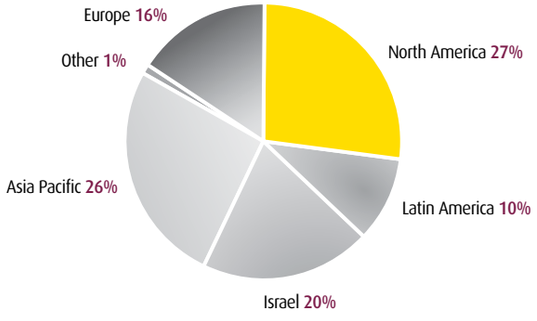
Revenues (in US$ Millions)



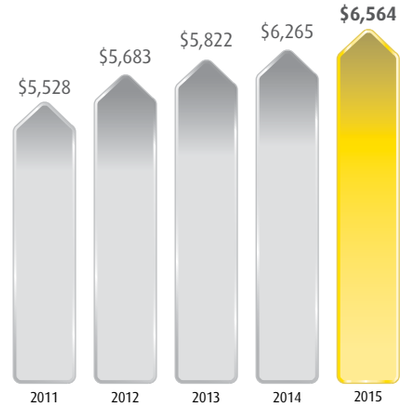
2015 Revenues by Areas of Operation



Net Income (in US$ Millions)



2015 Revenues by Geographical Distribution



Backlog (in US$ Millions)

Research Coverage: Bank Hapoalim, Bank Igud, IBI Ltd., Barclays Capital, Migdal Capital Markets, Clal Finance, Poalim Sahar, City Group
Auditors: Kost, Forer, Gabbay & Kasierer (a member of Ernst & Young Global)

SOCIAL SUSTAINABILITY

Elbit Systems' Commitment to Sustainable Operations

We are committed to promoting sustainable operations in the communities in which we live and work. This is consistent with our policy of emphasizing ethics and integrity. Our policy enhances and encourages the voluntary efforts of our companies and employees who donate their time and efforts in the support of members of our communities who are in need. We promote numerous community support activities in other countries in which we work and live. In addition to our community-related activities, we place emphasis on environmentally sound operational practices. We follow the leading standards of corporate governance and focus on ethical behavior in our business dealings. We are convinced that contributing to the community and sustainability makes good business sense.

Our mission to be a world-leading source of innovative, technology-based systems for diverse applications that enhance safety and security stems from our values, including accountability, ethical conduct and social responsibility. Our social sustainability policy, which reinforces our commitment to acting with integrity and making a positive contribution to a safer and more secure, sustainable world, resonates with each of our stakeholders.

For our customers: We assist defense, homeland security and first responder agencies around the world to perform their essential roles more safely and efficiently.

For our employees: We strive to maintain an inclusive workplace where individuals can develop their skills and achieve excellence. We provide competitive benefits, comprehensive training and diverse career opportunities while promoting open communications and attention to the needs of our employees and their families. At the same time, we place emphasis on employee health and safety.

For our suppliers: We adopt a business partnership approach, aiming to develop win-win relationships with suppliers to deliver the best solutions based on synergy and collaboration. We strive to deal fairly, while expecting our suppliers to uphold the principles of responsible and accountable business practices.

For our environment: We manage our impacts on the environment in terms of energy consumption, greenhouse gas emissions, water consumption, waste generation and recycling against plans and defined targets, with the goal of not only ensuring full compliance with environmental protection laws and regulations, but also reducing adverse environmental impacts where possible.

For our communities: We invest in the well-being of our communities through donations as well as a range of volunteer activities by our employees. One of our focuses is to advance technological education by partnering with educational establishments to create opportunities for young people in technology and build skills that will enable them to join the workplace and develop successful technology-based careers.

Elbit Systems maintains a commitment to transparency in social sustainability and has reported on our Corporate Responsibility and Sustainability activities since 2008. Our Sustainability Reports are prepared in accordance with the Global Reporting Initiative guidelines and is available on our corporate website. Our next report is scheduled to be published in mid 2017.

Design: Studio Dalia Inbar, Photography: Eli Gross, Keren Or, Shlomo Shoham, Assaf Haber, Miki Koren, Catom photography, Hagai Kaufman.
Additional photography: p.8 IAF magazine, p.10, 67, 75 Boeing, p.13, 72 R.M Rossman, p.23 Albatros, p.23 Nehemia Gershuni, p.26 Michael Mass, p.76 U.S. Air Force/Sgt. Kevin J Gruenwald, p.80 Courtesy photo by Kevin Kiold, p.80 U.S. Army/Shane A Cuomo, p.84 Dassaut Aviation.

TRAINING & SIMULATION

AEROSPACE

COMMUNICATION

HOMELAND SECURITY

UAS SIGINT CYBER

C4I SYSTEMS

COMMUNICATIONS

AEROSPACE

ELECTRO-OPTICS

SIGINT ELECTRONIC WARFARE

C4I SYSTEMS

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